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# THE Chemist

GENERAL L...

MAY 19 1945

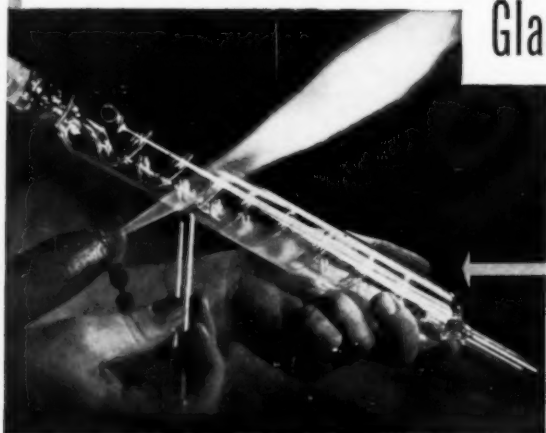
MAY, 1945 UNIVERSITY OF GEORGIA



VOLUME XXII, No. 5

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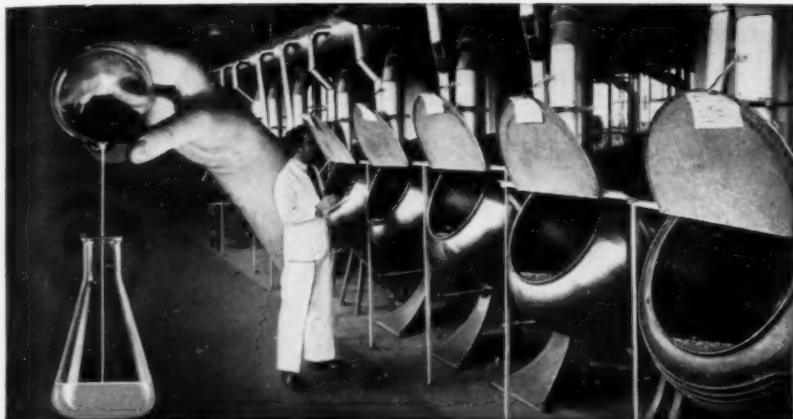


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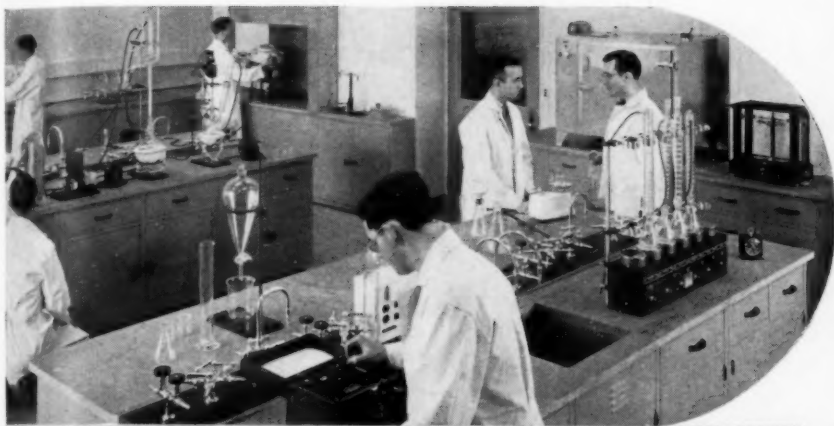
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# *The Chemist*

*Publication of*

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60 East 42nd Street, New York 17, N. Y.

Volume XXII

May, 1945

Number 5

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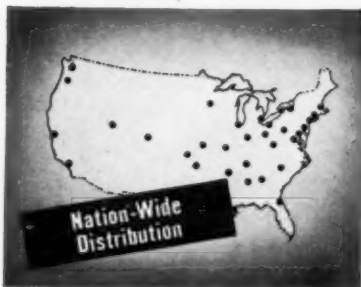
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☐ Periodic Chart of the Elements

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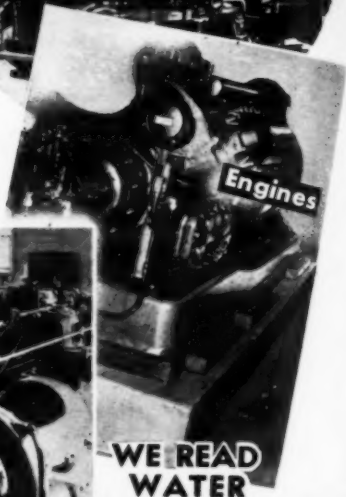
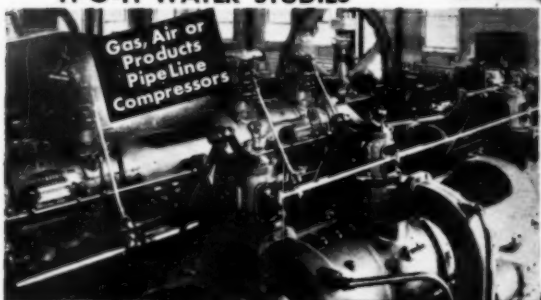
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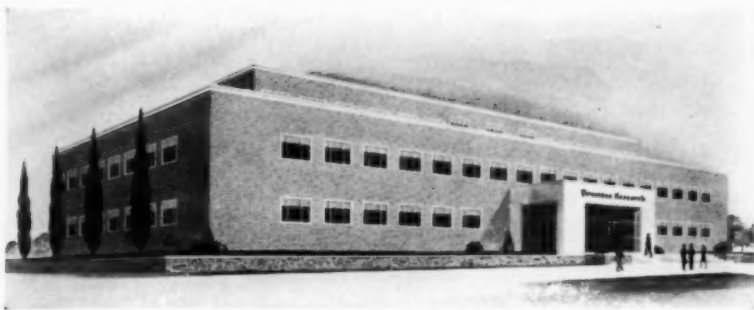
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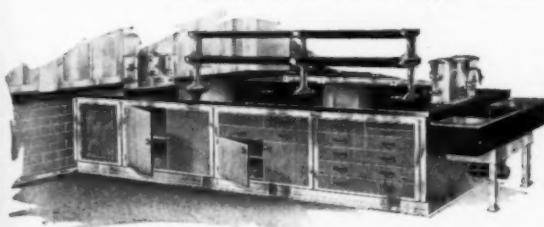
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# What MAKES *an Idea* *work?*



**M**EN with ideas have built the petroleum industry. But there may be a wide gap between the origination of a good idea and its successful application in service.

The idea may seem good but extensive research and experimentation may be needed to verify its usefulness... to establish the design of equipment... the proper procedures for practical use... the actual costs of operation.

Corollary research may be needed on such problems as recovery of solvents, con-

trol mechanisms, metering devices...

A complex patent situation may need to be cleared up... the potential demand studied... the idea promoted to potential users.

These are costly procedures. For want of them many a good idea has rested long years in the filing cabinet.

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## John W. Thomas



JOHN W. THOMAS, to whom THE AMERICAN INSTITUTE OF CHEMISTS has awarded its Gold Medal, is a pioneer in the conversion of rubber manufacture into a more exact science. As chairman and directing head of The Firestone Tire and Rubber Company, he has been closely connected with world progress in rubber for four decades.

The son of a Welch coal miner, Mr. Thomas walked ten miles a day to attend old Buchtel College (now Akron University), and worked his way through school while studying for a bachelor's degree in chemistry, which he received in 1904.

The drive which he displayed as a young man has remained with him always. Now sixty four, he usually

reaches his offices at 7:30 in the morning, and remains until after six at night.

After his graduation from college, Mr. Thomas spent four years as a chemist in an early rubber compounding laboratory at Akron, and his work won the attention of Harvey S. Firestone. The two met one evening in the Firestone home, and the astute industrialist and the eager young chemist immediately recognized in each other the qualities that were to become the foundations of one of the world's great industrial organizations.

Rubber-mixing and tire - making drew small benefit from science in 1908, when John Thomas founded the Firestone laboratories. He set up shop in a corner of the noisy tire plant, and went to work at the substitution of specifications for guesswork in the compounding of rubber. The young chief chemist was as tough-minded as any of the rugged, tobacco chewing foremen who resisted his attempts to change the old order; and his progress was steady, for science was discovering that exact formulae could improve the qualities of rubber compounds.

Gradually, Mr. Thomas began proving the value of chemistry and research, and the core of a competent research organization took shape under his direction. His work so impressed Mr. Firestone that within three years of their first meeting, the

young chemist had become general superintendent of the Firestone plants.

Those were the years when dozens of embryonic automobile companies, and dozen of tire shops were engaged in a fierce competitive struggle to push to the top of the rapidly growing automotive heap.

This was no game for hit-or-miss, amateur experimenters. The men and the companies who failed to develop outstanding products were shunted quickly to the sidelines. And constant improvement through scientific research was the specialty of the far-sighted chemist who was rising so rapidly through the Firestone ranks.

Because the organizational genius of Harvey S. Firestone instinctively led him to select the strongest men for the most important jobs, he began to place ever-increasing burdens on the willing, capable shoulder of John W. Thomas. Quickly, this association ripened into an inseparable team that was to affect deeply the course of American industrial history.

In 1916, Mr. Thomas became a director of the Firestone company; in 1919, vice-president; in 1932, president. One of the first major industrial executives to consider research an important arm of business, he indoctrinated the entire Firestone organization with the fact that research formed a most important arm of business.

## JOHN W. THOMAS

Mr. Firestone often recalled the evening when his summons had first been answered by the young man who had led the class in grades while working his way through Buchtel College. The original investment had been small. Mr. Thomas had asked \$100 a month, and Mr. Firestone had offered him \$90. Young John Thomas had jumped at this chance to trade \$10 for an opportunity; and Mr. Firestone, keen judge of character that he was, chuckled often at the way in which John Thomas had met his little test, since the industrialist had intended to pay his chemist \$100 at the start, which he proceeded to do.

This modest investment, in addition to uncovering a leader capable of taking up the standard and carrying it forward when Mr. Firestone passed on, also continued to pay immense dividends in the chemical research for which John Thomas originally had been hired.

Research in rubber also includes improved construction of the tire itself, and developments of machines to do a better job of building and curing tires. The research must be integrated with chemical findings. Metal and plastic products also are an important part of the rubber industry today, and research in these fields marches side by side with research in rubber.

All these activities, throughout the years, have been co-ordinated by Mr.

Thomas in a research organization that rapidly as it has grown in the past—is increasing still more speedily today, in personnel, in results, and in the scope of its activities.

In the councils of his industry, Mr. Thomas' confidence in the ability of chemists to create enough American-made rubber to suit all wartime demands played a leading role in the successful development of this material. Pure science without direction accomplishes comparatively little; with proper leadership, it is one of the greatest of all factors working for the good of mankind. No man has done more to establish such leadership than Mr. Thomas.

Dignified, white-haired, soft-spoken John W. Thomas is characterized particularly by his readiness to accept the new. Quick to spot a flaw, he is equally quick to praise. His silver-winged, twin-engined aircraft may cover hundreds of miles a day in racing him to the half-a-hundred war plants and the thousands of store and dealer units for which he is responsible.

A single day may find him hard at work in his Akron office until ten in the morning. At noon he may be munching sandwiches nine thousand feet above Illinois, enroute to the company's tire plant at Des Moines. A few hours later, he may have inspected the tire plant, a store or two, and be on the wing again for an inspection of a synthetic rubber plant in

Louisiana, a bomb-loading plant in Nebraska, or a rim plant in Michigan.

A new employee can gain access to Mr. Thomas' office as easily as a vice-president, and through such practices as this, Mr. Thomas has won the personal loyalty as well as the respect of his organization. He takes a personal hand in establishing activities which will benefit his employees.

No detail which will further the work of his organization is too small for him to explore; and no matter how long or how hard a subordinate may work, he is comforted by the fact that Mr. Thomas is outdoing him both in hours and in the volume of work handled.

His success is proof that American research has come of age, and that science has at last slipped into its rightful niche as a major component of the American industrial machine.

Completion of the largest and most advanced research laboratory ever created for the development of improved tires and other rubber and plastic products has been announced by Mr. Thomas. The two million dollar Firestone laboratory, designed to open a new era in the rubber industry, will bring immediate acceleration of research in dozens of fields. And on the top floor of the new laboratory, in an office whose wide windows command a sweeping view of the Akron Firestone plants, John W. Thomas will continue his never-ending search for the new.

### **Korea Plans Future**

The promise of postwar independence for Korea brought about the formation of the Korea Economic Society, 1775 Broadway, New York 19, N. Y. Jacob S. Kim is secretary-treasurer. This society of Korean business and professional men is endeavoring to interest technical experts and practical engineers in the future reconstruction of that country. The society also publishes a monthly magazine, "Korea Economic Digest."

### **Promotions at Corning**

Corning Glass Works announce the promotion of Edward C. Leibig, production manager of the Technical Products Division, to assistant to the director of glass technology. Justin J. Pfeiffer, manager of the company's Central Falls, Rhode Island plant was advanced to manager of manufacturing for the Technical Products Division. D. Kenneth Shaddock succeeds Mr. Pfeiffer as plant manager.

### **Canadian Chemical Conference**

The Chemical Institute of Canada will hold a conference at Quebec, June 4th to 6th. A symposium on research in Britain, America, and Canada will be held.

### **Corrosion Research**

A corrosion research laboratory, under the direction of Dr. Hugh McDonald has been established at Illinois Institute of Technology, Chicago, Illinois.



## Medal Presentation Program

THE 1945 medal of THE AMERICAN INSTITUTE OF CHEMISTS will be presented to Mr. John W. Thomas, chairman and chief executive of The Firestone Tire and Rubber Company, at a regular meeting of the Miami Valley Chapter of the INSTITUTE, to be held at the Deshler-Wallick Hotel, Columbus, Ohio, on May 11, 1945.

### Speakers

1:30 p.m. Donald B. Keyes, Director, Office Production Research and Development. "Cooperation in Industrial Developments."

James R. Withrow, Ohio State University. "The Effect of Selective Service on The Training of Chemists and Engineers."

L. E. Westman, Associate Director of National Selective Service in Canada. "The Status of Chemists and Engineers in Canada's Selective Service Scheme."

H. E. Nold, President, National Society of Professional Engineers. "What Licensing has done for the Engineer as a Professional Man."

John D. Coleman, President, Dayton Society of Professional Engineers. "What Licensing Could Do for the Chemist."

7:30 p.m. Introductory Remarks. E. L. Luaces, Chairman, Miami Valley Chapter, THE AMERICAN INSTITUTE OF CHEMISTS.

Colonel Bradley Dewey, President-elect, American Chemical Society and former United States Rubber Director.

H. E. Simmons, President, University of Akron.

Presentation of the Medal of THE AMERICAN INSTITUTE OF CHEMISTS to John W. Thomas by Dr. Gustav Egloff.

John W. Thomas, Chairman of The Firestone Tire and Rubber Company.

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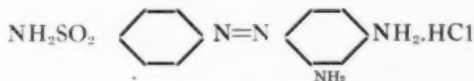
147 LOMBARDY STREET • BROOKLYN, NEW YORK

# The Chemist Studies the Sulfa Drugs

E. H. Northey, F.A.I.C.

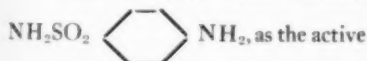
*Assistant Director of Research Calco Chemical Division,  
American Cyanamid Company*

TEN years have elapsed since Gerhard Domagk first published on the effectiveness of the red dye, "Prontosil", highly active in the body. Since that time, chemical research in the field has concentrated largely on derivatives



in curing blood stream infections caused by beta hemolytic streptococci, infections characterized by very high mortality up to that time. This dye and others have been synthesized by Fritz Mietzsch and Josef Klarer early in 1932, but it was not until 1935 that the pharmacological and clinical results were published.

Work was immediately started at the Pasteur Institute in France and, late in 1935, Trefouel, Trefouel, Nitti and Bovet published their results which indicated that the dye was cleaved at the azo linkage by the metabolism of the host to give sulfanilamide,



agent. This fitted the facts that Prontosil was inactive in the test tube but

of this parent compound. The results are summarized in Table I where the main classes of sulfanilamide derivatives and sulfones are listed together with the number of compounds in each class which has been published, or disclosed to the author for publication, up to January 1, 1945,

Sulfanilamide and its  $\text{N}^1$ -monosubstituted derivatives have weak acidic properties associated with the sulfamyl group,  $-\text{SO}_2\text{NR}$ , and are able to form

H

salts with strong basis. The influence of the R group determines the acidic strength of the group, which becomes a maximum when R is acyl ( $\text{RCO-}$ ) or sulfonyl ( $\text{RSO}_2\text{-}$ ). Such compounds are strong acids and form neutral salts.

Most sulfanilamide derivatives are also weak bases and form salts with

\*Lecture delivered before The New York Chapter, AMERICAN INSTITUTE OF CHEMISTS, March 23, 1945.

TABLE 1



## Main Classes of Sulfanilamide Derivatives

	Number Reported
Salts of Sulfanilamide .....	50
Nuclear-Substituted Sulfanilamides .....	37
<u>N</u> <sup>1</sup> -Substituted Sulfanilamides .....	953
Acyclic .....	97
Isocyclic .....	223
Heterocyclic .....	393
Acyl .....	188
Inorganic .....	52
<u>N</u> <sup>4</sup> -Substituted Sulfanilamides .....	689
Nuclear- <u>N</u> <sup>1</sup> -Substituted Sulfanilamides .....	37
Nuclear- <u>N</u> <sup>4</sup> -Substituted Sulfanilamides .....	59
<u>N</u> <sup>1</sup> -, <u>N</u> <sup>4</sup> -Substituted Sulfanilamides .....	1507
Nuclear- <u>N</u> <sup>1</sup> -, <u>N</u> <sup>4</sup> -Substituted Sulfanilamides .....	38
Unclassified Derivatives of Sulfanilamide .....	11
Total Sulfanilamide Derivatives .....	3381
Related Compounds .....	1317
Sulfones .....	566
Related Compounds .....	169
Grand Total .....	5433

## THE CHEMIST STUDIES THE SULFA DRUGS

strong acids. Various complex salts are also known. None of the salts of sulfanilamide have been of commercial importance, but the sodium salts of various  $N^1$ -substituted sulfanilamides are important in therapy, in that they provide a soluble form of the drug for intravenous injection where rapid establishment of blood levels of the drug is important.

The  $N^1$ -substituted sulfanilamides include most of the new and therapeutically important sulfa drugs which have been synthesized. When the substituent is alkyl, activity is reduced, but may be increased slightly by substitution of phenyl or substituted phenyl groups. None of these derivatives is now of commercial importance. The introduction of certain heterocyclic rings in the  $N^1$ -position has led to the most potent of the sulfa drugs so far found. A number of these are listed in Table 2.

Sulfapyridine was the first of these to be introduced. It was first synthesized by Ewins and Phillips, but independently by many others at about the same time. In this country it has been largely superseded by sulfathiazole and sulfadiazine which are even more potent and considerably less toxic. European countries still appear to use large quantities of sulfapyridine in spite of the fact that its use nauseates about 40 per cent of patients treated with the drug, whereas in the case of sulfathiazole, the incidence of

nausea is cut to 10 per cent and with sulfadiazine to 20 per cent.

Sulfadiazine is rated drug of choice for most of the common infectious diseases because it combines high potency with the lowest toxicity of any of the more potent sulfa drugs. The most frequent serious toxic reaction encountered with the drug is kidney damage caused by crystallization of the free drug or its  $N^4$ -acetyl derivative (to which a part of the drug is converted by body metabolic processes). Such crystallization can be prevented by giving sufficient sodium bicarbonate to maintain the pH of the urine above 7. Sulfadiazine is many times more soluble at pH levels above 7 than at pH 6 because it forms a very soluble sodium salt.

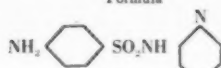
Sulfamerazine was introduced with the claim that in half the dosage it produced an equal blood level of drug and equivalent therapeutic response. The incidence of toxic reactions in about 1000 case histories compiled by the author from various publications appears to be significantly higher than for sulfadiazine. "Sulfamezathine" (formerly "Sulfamethazine") has been studied most extensively in England where it is said to give the therapeutic response of sulfadiazine with less danger of kidney stoppage because of its higher solubility. Greater dosage appears necessary, however, and medical opinion in this country does not rate the drug as valuable as sulfadiazine.

TABLE 2

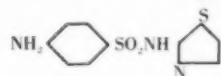
Trade or Proprietary Name

Formula

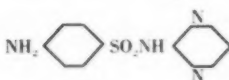
Sulfapyridine



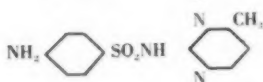
Sulfathiazole



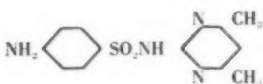
Sulfadiazine



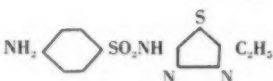
Sulfamerazine



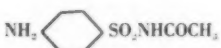
"Sulfamezathine"



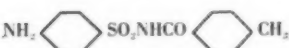
"Globucid"



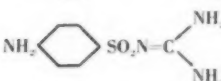
Sulfacetamide



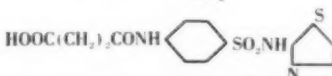
"Irgafen"



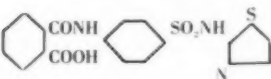
Sulfaguandine



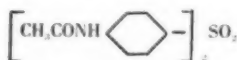
Succinylsulfathiazole



Phthalylsulfathiazole



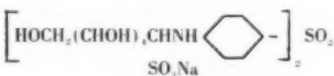
"Rodilone"



"Diasone"



"Promin"



"Promizole"

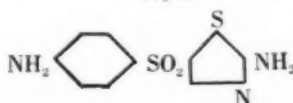


TABLE 3

Compounds Antagonized by PABA

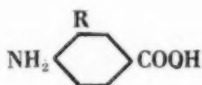
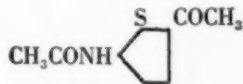
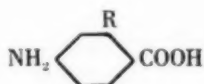
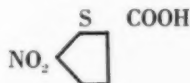
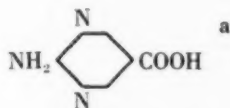
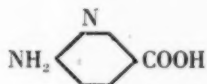
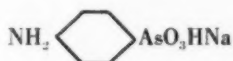
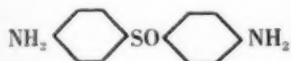
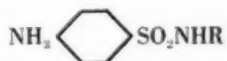
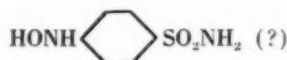
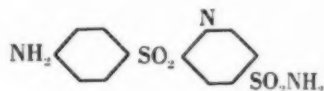
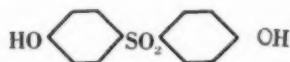
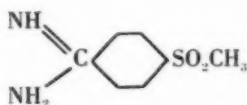
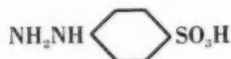
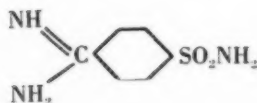


TABLE 4

## Compounds not Antagonized by PABA



"Globucid", 2-sulfanilamido-5-ethylthiadiazole, has been introduced in Europe and some favorable clinical publications have appeared; however, these do not permit an evaluation in comparison with sulfadiazine.

While a large number of N<sup>1</sup>-acyl-sulfanilamides have been synthesized, only three have achieved commercial importance. Sulfacetamide ("Albucid", "Sulamyd") forms a highly soluble and neutral sodium salt which is employed for eye infections. The

free drug is also used for urinary tract infections where its high solubility eliminates danger of crystallization in the kidney. It is not as potent a bacteriostatic agent as sulfathiazole or sulfadiazine, however, so does not approach these in general usefulness.

"Irgafen" has been studied in Switzerland. It appears unique in that high blood levels of drug can be rapidly attained and maintained with comparatively small doses of drug. Its potency is said to be comparable to



## THE CHEMIST STUDIES THE SULFA DRUGS

sulfapyridine. It is of considerable interest that none of the isomers obtained by shifting the position of the methyl groups on the benzene ring has high bacteriostatic activity.

Sulfaguanidine, which is an  $N^1$ -acetylsulfanilamide theoretically derived from carbonic acid, has been of immense war importance in combatting bacillary dysentery, a disease which has killed more soldiers in past wars than died from enemy bullets. Recent medical opinion places sulfadiazine as drug of choice for dysentery because of its higher potency and because presence of drug in the blood stream is now considered an advantage in treating severe dysenteries, whereas, formerly it was considered an advantage to use a poorly absorbed and rapidly excreted drug so that very high concentrations could be maintained in the gut without danger of toxicity associated with high blood levels.

Succinylsulfathiazole ("Sulfasuxidine") and phthalylsulfathiazole ("Sulfathalidine") are examples of  $N^1$ ,  $N^4$ -substituted sulfanilamides which are important drugs in treatment of intestinal infections. High concentrations may be maintained in the faeces with only small amounts of sulfathiazole (which is produced by hydrolysis of the drug and may or may not account for most of the activity in the gut) appearing in the blood.

Derivatives of bis (4-aminophenyl) sulfone have been extensively studied

in the hope of favorably modifying the toxic properties of the parent compound, which is of high potency and would be highly useful if tolerated by the body. Some success has been attained but it seems probable that derivatives of the parent compound such as "Rodilon", "Diasone" and "Promin" owe their activity to slow cleavage to bis (4-aminophenyl) sulfone. "Diasone" and "Promin" have both been studied clinically against tuberculosis and leprosy. The results have been promising but are difficult to evaluate because of the slow progress of these diseases. "Promizole", an isostere where one of the benzene rings has been replaced by the thiazole ring, is also being studied in these diseases.

### Mechanism of Action

Much speculation has been aroused as to how the sulfa drugs and sulfones accomplish their results. Before considering some of the hypotheses which have been offered, the established facts are first viewed:

1. The action is bacteriostatic, not bactericidal. This may be readily demonstrated by taking a sample of a culture several hours after growth has been stopped by a sulfa drug and inoculating a fresh culture medium, whereupon the bacteria continue to grow, showing that growth has been stopped by the drug but the organisms are still alive.

2. Compounds are known which

antagonize the action of sulfa drugs. The most potent of these *p*-amino-benzoic acid (PABA) which when added in small amount to a culture which has been completely inhibited by a sulfa drug allows the bacteria to continue to grow as though no sulfa drug were present. It has been shown that the ratio of the molar concentration of sulfa drug to molar concentration of PABA, (at a given pH of substrate) where the growth rate is 50 per cent of that of control cultures, is constant over quite a wide range of tions of sulfa drug to molar concentration of amino acids, purines and peptones are known to antagonize the effects of sulfa drugs but are not as potent. The effect of some of these may be through stimulation of growth of the bacteria, but PABA does not appreciably increase the growth rate of pathogenic bacteria.

3. There is a lag before the effect of the sulfonamide drug is exerted in stopping the growth of bacteria. Bacteria added to a culture (or animal) containing relatively large amounts of sulfa drug usually continue to grow for the first two or three hours.

4. The sulfa drugs do not affect body defense mechanisms such as phagocytosis or antibody formation. Such mechanisms are essential to final elimination of the infection but acceleration of their activities is not the mechanism whereby the drugs accomplish cures.

5. The inactivity of the isomers of

sulfanilamide and its derivatives as well as the lack of antagonism by isomers of PABA must be explained by a satisfactory theory.

6. Bacteria become resistant to the action of the sulfa drugs. The mechanism of this effect should be explained.

7. Increased temperature markedly increases the bacteriostatic potency of the drugs.

8. The activity is biphasic, i.e. sulfanilamide is said to produce a stimulation of growth at very low concentrations while PABA may inhibit growth at high concentrations.

9. The effects of sulfa drugs and PABA are similar against many different cells besides bacteria, e.g. malarial parasites, plant seedlings, diatoms and yeast.

The fact of the antagonism by PABA has assumed immense importance, as will appear below, and much study has been directed towards seeing how specific its effect is to reversing the bacteriostatic activity of sulfa drugs. Table 3 shows compounds which are antagonized by PABA while Table 4 shows a few compounds which are not. Table 4 might be supplemented by a considerable number of compounds having bactericidal or bacteriostatic activity but which are of completely dissimilar structure and are not antagonized by PABA.

From an inspection of these tables, it will be observed that a structure analogous to PABA appears to be of greater importance for bacteriostatic

## THE CHEMIST STUDIES THE SULFA DRUGS

activity reversible by PABA than resemblance to sulfanilamide. It will be observed that replacement of the carboxyl group in PABA by  $-\text{SO}_2\text{NHR}$ ,  $-\text{SO}_3\text{H}$ ,  $-\text{SO}_2\text{R}$ ,  $-\text{AsO}_3\text{H}_2$ ,  $-\text{PO}_3\text{H}_2$ ,  $-\text{SbO}_3\text{H}_2$ , or  $-\text{COR}$ , each of which bears a fairly close analogy to a carboxyl group, gives bacteriostatic agents (many of them so weak as to be impractical chemotherapeutic agents) which are antagonized by PABA.

Isosteres of PABA are also bacteriostatic agents reversed by PABA; however, in at least one case, (<sup>a</sup> Table 3) 2-amino-4-carboxypyrimidine, a compound isosteric with PABA, acts as a sulfa drug antagonist the same as PABA but much weaker. Nuclear substituted derivatives of PABA may also be either bacteriostatic agents or sulfa drug antagonists and occasionally it is difficult to decide in which category to place a compound since these biphasic effects occur over a narrow range of concentrations and are usually weak.

Compounds of somewhat similar structure which are not antagonized by PABA are observed to involve replacement of the amino group of PABA or one of its analogues by  $\text{NH}_2\text{CH}_2-$ ,  $\text{NH}_2\text{NH}$ ,  $\text{HONH}$ - or other functions not resembling an amino group. Conflicting statements have been made concerning the antagonism of *p*-hydroxylaminobenzenesulfonamide by PABA. An explanation may lie in the time at which the results were read since the compound is

said to be converted to sulfanilamide which is, of course, antagonized.

The hypothesis which has received widest acceptance as an explanation of these and other facts was advanced by Woods and Fildes. They postulated that PABA is essential at some stage in the metabolic processes of bacteria which permit growth and reproduction of the bacteria. It might be a part of a bacterial enzyme system. Any substance which possesses a close structural similarity to PABA might then take the position of PABA in the enzyme system and thereby inactivate the functioning of the enzyme. While this would not cause the death of the bacterium, essential syntheses would be stopped and growth would be arrested. Addition of PABA would displace the inhibitory compound and permit resumption of growth.

Many essential bacterial growth substances ("essential metabolites") are known, some of which the bacteria can synthesize but others (growth factors) must be supplied in the substrate. Fildes, therefore, suggested that chemotherapeutic research be directed towards synthesis of compounds analogous to the known bacterial essential metabolites. These might block essential synthetic processes of the bacteria and be useful drugs.

A considerable number of such metabolite analogues have now been synthesized and have been shown to be inhibitory to growth and to be antagonized by the parent compound.

TABLE 5

<u>Essential Metabolite</u>	<u>Inhibitors</u>
Nicotinic acid	3-Pyridinesulfonamide
Pantothenic acid	Pantoyltaurine
	B-Aminobutyric acid
Thiamine	Pyriethamine
	Oxythiamine
Riboflavin	Phenazine analogue
	Dichloro analogue
	Isoriboflavin
Amino acids	Other amino acids and sulfonic acid analogues
Biotin	Desthiobiotin
	Biotin sulfone
	Cyclohexane analogues
Tryptophane	3-(B-Naphthyl) acrylic acid
	3-Indoleacrylic acid
	Styrylacetic acid
Purines	Benzimidazole
	Triazole analogues
Uracil	Barbituric acid
O <sub>2</sub>	CO

## THE CHEMIST STUDIES THE SULFA DRUGS

Some of these essential metabolites and their analogues are shown in Table 5. As yet none of these has proven useful in therapy either because of high toxicity, poor absorption-excretion characteristics, or other considerations. The approach is, however, extremely interesting and may yet be highly fruitful. It is the only fundamental theory in the field, which offers a definite program of investigation and synthesis as a guide to research. This in no way implies that other approaches to new chemotherapeutic drugs may not be more successful.

It is perhaps significant that several of the compounds in Table 4 have no known essential metabolite analogues yet are potent bacteriostatic agents. In particular "Marfanil", *p*-(aminomethyl)-benzenesulfonamide, is not antagonized by *p*-(aminomethyl) benzoic acid.

The importance of the sulfa drugs to modern medicine, and particularly to military medicine, is reflected by statistics which showed that in 1943 the United States produced 10,005,307 lbs. of these drugs. This huge production was enough to treat a serious disease, such as pneumonia, in every member of our population once during the year. It represents a peak that will not again be reached because it involved stocking the needs of the armed forces all over the world. The availability of penicillin in quantity will also lower the demand for these

drugs; however, this will be counterbalanced in part by lower costs which will permit greater utilization of sulfa drugs in veterinary medicine.

The future holds the promise of specific cure of most of the common infectious diseases of mankind through chemotherapy. Much research is being devoted to the chemotherapy of non-infectious diseases also and the successful treatment of thyrotoxicosis by thiouracil may be an important milestone in this direction. Cancer, which is perhaps the most formidable of diseases, is also being attacked by chemotherapeutic research and it is not too much to hope that this will ultimately yield.



Milton A. Glaser, F.A.I.C., chief chemist of the Standard Varnish Works, Chicago, addressed the Products Design sections of the School of the Art Institute of Chicago, recently, on "Modern Finishes for Industrial Products."



The Practical Pharmacy edition (April 1945) of the *Journal of The American Pharmaceutical Association* is devoted wholly to the subject of Penicillin, as a convenient review for pharmacists, since the drug has now been made available for sale through retail pharmacies.

A laboratory clinic on "Weight and Shape of Polymer Molecules" will be given at Brooklyn Polytechnic Institute during the week of July 23 to July 27, under the direction of Dr. Herman F. Mark.

Hercules Powder Company announces the retirement of George C. O'Brien, manager of the Naval Store Department office in New York, after fifty years of service. Herbert M. Wendle, of the Wilmington office, will succeed Mr. O'Brien.



#### High Polymer Conference

A conference on "The Ultracentrifuge in High Polymer Research" will be held June second at Polytechnic Institute of Brooklyn, under the joint auspices of the Polytechnic Institute, the Society of Rheology, and the Metropolitan Section of the American Physical Society. Dr. James Burton Nichols, research chemist, of the Experimental Station of the Du Pont Company will preside at the conference.

#### Annual Report of Committee on Unemployment

THERE being no unemployment problems arising during the current year, your Committee held no meetings.

Respectfully submitted,  
E. R. ALLEN, *Chairman.*

(See pages 283-291 for other  
Committee Reports)

#### Gross Wins Herty Medal

The Herty Medal will be presented to Dr. Paul Magnus Gross, head of the Department of Chemistry, Duke University, at the meeting of the Georgia Section of the American Chemical Society, to be held at Georgia State College for Women, Milledgeville, Ga., on May fifth.

#### Odell with James Bute Company

L. B. Odell, M.A.I.C., formerly research chemist, Eagle-Picher Lead Company, Joplin, Missouri, is now plant manager and technical director of the James Bute Company, Houston, Texas.



Dr. Jesse E. Hobson, director of the Armour Research Foundation of Illinois Institute of Technology, Chicago, announced two recent gifts to the foundation totalling \$10,500, for the purpose of equipment and books.



Stein, Hall and Company, 285 Madison Avenue, New York, announce the retirement on July first of John Goldstein, treasurer and director, after thirty-seven years of association with that company.



The National Roster of Scientific and Specialized Personnel has registered 71,401 chemists, of whom 55,020 hold one or more degrees. Women chemists registered total 4718.

## Schroder Appointed Executive Director of A.I.C.



Arthur Schroder, F.A.I.C., has been appointed executive director of The American Institute of Chemists. Mr. Schroder will assume his new duties on May 1, having first been released from the Office of Alien Property Custodian, where he has been evaluating chemical patents seized from the Axis powers.

Arthur Schroder, a native New Yorker, received his B.S. from the College of the City of New York, where he majored in chemistry and minored in engineering and mathematics. On graduating he entered the employ of The Barrett Company and spent several years in research on the catalytic oxidation of benzol to maleic

acid, naphthalene to phthalic anhydride and anthracene to anthraquinone.

During the First World War he was a private in the infantry. On returning to chemistry he cracked shale oil for the Commonwealth Finance Corporation, worked on the catalytic oxidation of petroleum, lacquers and solvents for Carleton Ellis, and cooperated in designing the first pilot plant for the continuous activation of alumina for the Aluminum Company. His interest in analytical chemistry then carried him into the laboratory apparatus industry where, as technical director of companies like Fisher Scientific and Precision Scientific Company, he developed numerous new pieces of laboratory equipment and edited their catalogs.

Returning to the petroleum industry, he was research chemist for the Pure Oil Company and specialized in the cracking and sweetening of gasoline and the standardization of control methods of chemical analysis. Throughout all this he has been intimately connected with patents, some of which are in his own name.

Recently Schroder has been with the Chicago office of the Patent Use and Development Section of the Office of the Alien Property Custodian of the United States Government, evaluating the foreign patents seized by the Custodian, with a view toward



## Our Wartime Accomplishment

*Charles Pfizer and Company, Inc.*

WE believe our greatest achievement during the war period is very early, large, and rapidly increasing production of penicillin of progressively higher purity, promptly delivered to play its part in the treatment of war wounds and urgent civilian sicknesses.

Discovery of penicillin was accomplished in England by Sir Alexander Fleming. Unmistakable evidence of its value in the treatment of disease was supplied by Sir Howard Florey and co-workers. At that stage the project may be said to have migrated to this country. Problems set by the magnitude and

immediate urgency of demand for the active material were attacked and solved here. Improvements must and shall continue, but the end result is no longer in doubt.

Our organization attacked simultaneously the interlocking problems of growing the temperamental mold, extracting, purifying, and drying the unstable product, devising suitable testing and packing procedures, constructing apparatus for commercial production, and expanding our scale of operations as fast as experimentation showed the way.

making them more readily available to the American chemical industry.

In addition to the above duties, for the past three years he has been giving a course in Industrial Methods of Chemical Analysis at Illinois Institute of Technology under the Engineering Science War Training Program of the Government.

Schroder has also contributed numerous articles to the technical journals. He is a member of the American

Chemical Society, the American Society for Testing Materials, the Electrochemical Society, the American Oil Chemists Society, and a trustee of the Chicago Chemists' Club. He was Secretary of the Pittsburgh Section of the American Chemical Society for five terms, and for the past five years has been managing editor of *The Chemical Bulletin*, the official publication of the Chicago Section. He is also vice-chairman, director, and councilor of that section.



THE *Case* OF  
THE CHEMIST OF

Aachen



Strange justice, perhaps, that a discovery of Ludwig Claisen, one-time chemistry professor of Aachen, is now a major factor in saving the lives of allied soldiers!

Claisen's discovery was only the beginning. For his "Claisen reaction" might well have ended as an item in abstruse chemical journals had it not been for the American company which took his test-tube discovery and developed it into tank-car production.

Since 1919, U. S. Industrial Chemicals has been pioneering tonnage-scale production of a whole new series of chemicals based on "Claisen reactions".

Atebrin, the crucially needed substitute for quinine, for example, is the product of a chemical synthesis which starts with a Claisen reaction. Sulfadiazine, which is helping reduce soldier

mortality, starts with two complex chemicals which U.S.I. combines by a Claisen reaction.

Vitamin B is now being synthesized in large quantity for use in army field rations. This manufacturing process again depends upon intermediates produced by U.S.I., via a Claisen reaction.

Postwarwise, perhaps the most interesting U.S.I. "Claisen" product is Indalone, whose unique insect-repelling properties will undoubtedly make it a fisherman's "must", come V-Day.

Claisen-type reactions are but one field in which U.S.I. research is everlastingly at work shaping new chemical "building blocks" for other industries, finding new end-products for a healthier and soon, we hope, happier humanity.

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# President's Annual Report

**Gustav Egloff**

*President, The American Institute of Chemists*

THE AMERICAN INSTITUTE OF CHEMISTS culminates its activities for the year 1944-1945 with the award of its Gold Medal to John W. Thomas, chairman and chief executive of The Firestone Tire and Rubber Company. The award will be made on May 11th at Columbus, Ohio, under the auspices of the Miami Valley Chapter. It is timely that Mr. Thomas be so recognized, because his foresight as a chemist and administrator were in a large measure responsible for the development of synthetic rubber into commercial reality. His contributions are as important to our nation as those of any chemist today.

This year the INSTITUTE has reached a new peak of achievement. The membership is at a new high of over 2,000 with eleven active chapters. Our monthly publication, THE CHEMIST, has doubled in size and improved in quality. Consequently, the amount of advertising has markedly increased. THE INSTITUTE's position is the best in the twenty-two years of its existence.

On May first of this year, Mr. Arthur Schroder became executive director of the INSTITUTE. His ap-

pointment marks an important step in increasing the tempo and effectiveness with which the objectives of the INSTITUTE will be pursued.

The INSTITUTE is striving to raise the prestige of the chemist to at least that enjoyed by the legal and medical professions. The economic and social status of chemists is now at a higher level than ever before, and the INSTITUTE has taken steps during the past year to raise it even further. Several committees have been appointed to study various aspects of this problem.

The committee on Contracts has been active in helping both employers and employees draw up contracts agreeable to both parties.

The committees on Licensing and Professional Status have stressed the necessity of properly defining the chemist. This definition must be formulated in order to render licensing legislation effective. The articles which have recently appeared indicate that considerable interest along this line of thought has been stimulated. The committee on Licensing, with legal counsel, has prepared a bill for the licensing of chemists in New York. Similar bills are being prepared for

presentation to the legislatures of a number of other states of the Union.

Factors involved in the threat of unionization to the professional status of the chemist are being studied in detail by the committee on Collective Bargaining. According to the Wagner Act and the National Labor Relations Board rulings it is legally necessary to set up organizations which can function as the required bargaining agents in all controversies involving labor relations. The committee is working towards the formation of such an organization to adequately represent chemists without lowering their professional standing.

A number of bills have been written which, if passed, would seriously hamper the chemist in his work. Some of these bills seek to regiment all scientists and technologists, and scientific research and development. Others have been formulated for the purpose of drastically modifying or making impotent our patent system. Both national and state civil service laws endanger the professional status of the chemist. Their provisions, unfortunately, do not demand minimum educational requirements for chemists as they do for some other scientific employees. The INSTITUTE disseminates information concerning these measures, recent court decisions, and other matters that have bearing on the chemist's welfare. This material is distributed by mail to the chairmen

of all local sections of THE AMERICAN INSTITUTE OF CHEMISTS, American Chemical Society, American Institute of Chemical Engineers, American Institute of Mining and Metallurgical Engineers, Western Society of Engineers, Society of Automotive Engineers, Industrial Research Institute, and also to many outstanding individuals who have a deep interest in raising the chemist's professional status.

The INSTITUTE recognizes the fact that international cooperation is essential to the best interests of chemists. A committee on Pan-American Relations is functioning for this purpose. Contacts have already been made with many chemists and scientific societies of South America.

The INSTITUTE has faith in the ideas and opinions of scientists on many of the non-technical problems of the day. A program entitled "What Shall We Do With Germany?" was given at a meeting of the Chicago Chapter in December, 1944. Different solutions were presented by eminent scientists and technologists and a lively discussion from the audience followed. In the belief that the views expressed would bear close study, this program was printed in pamphlet form and sent to the President of the United States, Members of his Cabinet, Members of the Congress, various governmental divisions, presidents of leading universities and colleges, newspaper and journal editors, news commentators, presidents of scientific

## PRESIDENT'S ANNUAL REPORT

societies, and chairmen of local sections of scientific societies. The response from those receiving copies of these addresses has been excellent.

Although the scientist and engineer are seldom credited with ideas on any subjects other than those of a technical nature, they, nevertheless, have them. The conclusion should be drawn that these men who are so largely responsible for many of the tremendous victories attained during World War II deserve representation

at the peace table conferences to come. We realize how vital the issues involved in securing a lasting peace are at this time. Our hope in concluding the present fiscal year is that when we meet in May 1946, peace will be at hand and solution of the ensuing problems well under way, with chemists, and other scientists, and technologists taking a leading part therein.

The details of the various activities of the INSTITUTE are given by the reports of the officers and various committees, which follow.

# Annual Report of Committees

## Annual Report of Committee on National Legislation Affecting Chemists

THE continual draining of chemists, chemical engineers and other scientists from the Production Army into the Combat Army is a most serious challenge to the successful prosecution of the war with Japan and threatens the postwar safety and prosperity of this country. This tragic condition is further aggravated by the fact that our colleges and universities have been practically denuded of students pursuing scientific courses. Unless these two adverse conditions are immediately corrected, the country faces the loss of at least an entire generation of scientists. In contrast to our indefensible policy of drafting scientific personnel into the Combat Army, where their special skills are not employed, our Allies and enemies alike have insisted that their scientists

and technologists remain in the fields of teaching, research and production. America's postwar competitive position will be jeopardized unless corrective measures are immediately taken.

This dangerous situation has been called to the attention of the President and high ranking military and civilian officials, but the drafting of scientific personnel continues and has reached a most critical stage.

A bill has been introduced into Congress by Congressman McDonough of California, H.R. 2827:

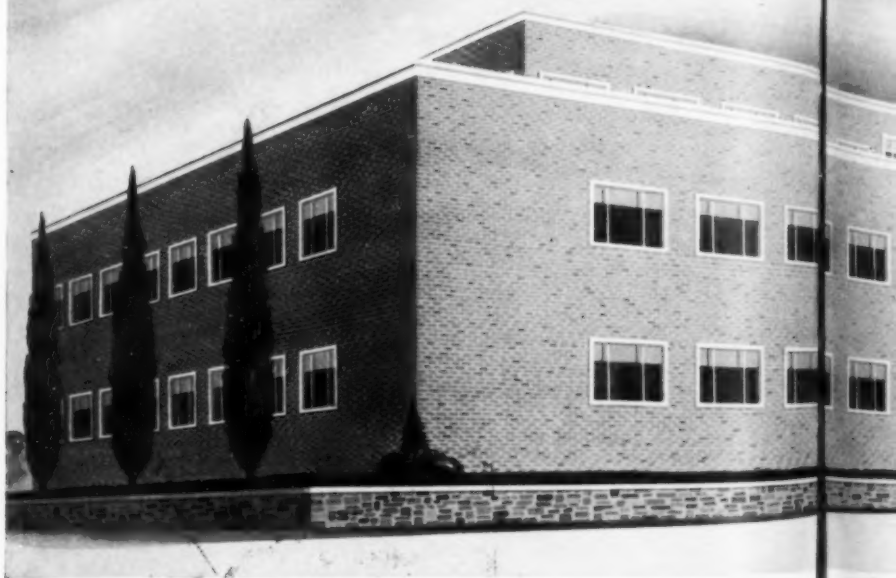
"To authorize the release of persons from active military service and the deferment of persons from military service, in order to aid in making possible the education and training and utilization of scientific and technological manpower to meet essential

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needs both in war and in peace.

1. Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That (1) in order to make possible the training, education, and availability of such numbers of Persons as are necessary for the health, safety, and welfare of the Nation in the sciences of fundamental importance to the conclusion of the war, the safe reconversion of the national life to the ways of peace and the Nation's potency in the world's future economy, the President shall, under such rules and regulations as he may prescribe, provide for the deferment from military service of—

- (a) not to exceed twenty thousand young men annually for training to meet essential needs in the physical sciences and in their application to technology and engineering, and of teachers to conduct said training program; and
- (b) fifteen thousand trained scientists and engineers now employed in research or by industry in work essential to the health, safety, and welfare of the Nation.

SEC. 2. The discharge or assignment to essential civilian pursuits of—

- (a) not to exceed twenty thousand technically trained enlisted men, especially chemists, chemical engineers, physicists, and mathematicians, not utilizing their highest skills in the practice of their professions in the Army or Navy to industries and educational institutions urgently in need of such men; and
- (b) not to exceed fifteen thousand enlisted men partially trained in those branches of science and engineering in which shortages exist, but whose collegiate training was interrupted by military service and who had shown promise of completing with distinction their preparation for professional work; providing they undertake to immediately resume and continue their collegiate training to graduation.

SEC. 3. No provision of law in force on the date enactment of this Act shall be construed to authorize any action inconsistent with the provisions and purpose of this Act."

Only an enlightened and aroused



## ANNUAL REPORTS OF COMMITTEES

public can apparently change the existing policies on deferment. It is highly desirable for those who understand and appreciate the inherent dangers of depleting America's technological manpower resources to interest the lay public in advocating the passage of Bill H. R. 2827 at the earliest possible moment.

Attention is also called to the recent action of the U. S. Civil Service Commission on the matter of minimum educational requirements for chemists and chemical engineers, physicists, etc. Every effort should be made to convince the Commission that the new policy is wrong. At the present time it is our understanding that the Civil Service Commission will require minimum educational qualifications in the case of medical doctors, dentists, veterinarians, teachers, nurses, and some other classifications which very obviously fall within the category of scientific, technical, and professional positions, but will not demand minimum educational requirements from those who seek positions as chemists, physicists and engineers. This is a direct challenge to the professional standing of chemists and chemical engineers.

Collective bargaining is also of special interest to chemists and chemical engineers. Every member of the chemical profession should study the rulings of the National Labor Relations Board on Collective Bargaining for professional people. Detailed in-

formation on the present status of Collective Bargaining will be found in two articles published in *CHEMICAL AND ENGINEERING NEWS*—(1) in January 10, 1944, and the other in the March 10, 1945, issue of the same Journal.

A number of bills have been introduced into Congress which will have a decided adverse effect on the patent system of this country if enacted. Specific comments on these are left, of course, to the Committee on Patents, but every chemist and chemical engineer should have a direct and active interest in seeing that benefits of the U. S. Patent System are not eliminated under the guise of certain so-called patent reform measures.

Respectfully submitted,

WALTER J. MURPHY,  
*Chairman.*

### Annual Report of the Committee on Economic Welfare

**D**UE to the pressure of war matters, your committee has been comparatively inactive this year. Data for comparison of the relative economic status of the chemist, lawyer and physician have been accumulated, but there has been no opportunity to do the comparatively large amount of statistical study necessary for a fair relative comparison of the data.

Respectfully submitted,

FOSTER DEE SNELL, *Chairman.*

## Annual Report of the Committee on Constitutional Revision

THE Committee on Constitutional Revision met on Jan. 18, 1945, under the chairmanship of E. H. Northey with M. L. Crossley and H. G. Lindwall present and, by invitation, F. A. Hessel, Chairman of the Committee on Pan American Relations. Opinions on the business before the committee were expressed by letters from H. S. Neiman and E. R. Allen who could not attend.

Dr. Hessel presented the proposal by the Committee on Pan American Relations that, in order to promote good-will between chemists of all American Nations, new classes of membership in the INSTITUTE to be known as Corresponding Fellows and Corresponding Members be created by amendment to our constitution. Such members would have to meet the qualifications established for present Fellows and Members, except that of U. S. citizenship, but would not be privileged to vote.

It was brought out in the discussion which followed and from comments expressed by Mr. Neiman that there are many reasons why such a change in constitution would be unwise. The more cogent of these are:

1. THE INSTITUTE was founded to promote the professional (and not the scientific) interests of American chemists. These interests are peculiarly national. What is in the

interest of American chemists is not necessarily of benefit to chemists of other countries who operate under different laws and customs.

2. All our members are expected to abide by our Code of Ethics and violations are punished by expulsion. It would be next to impossible to enforce such a code of ethics among "Corresponding Members," especially where such ethics are not customary in the business life of the country.

3. The certificate of membership and emblem of the INSTITUTE might be abused in countries where we would have no control over representations made in the name of the INSTITUTE.

4. It would be unfair to attempt to enforce INSTITUTE discipline and policy among members who have no voice in establishing such policies.

5. It would be extremely difficult to evaluate membership applications from South Americans whose training and experience have been in institutions largely unknown to members of our Council. Such an applicant's personal qualifications would also be difficult to judge.

In view of the above, the Committee on Constitutional Revision was unanimously opposed to the creation of new memberships of this kind. It recommended instead that the Council appoint a Corresponding Secre-

## ANNUAL REPORTS OF COMMITTEES

tary whose duties would be to maintain contact with Pan American chemists and give them the benefit of our experience in case they were interested in setting up their own national organization similar to ours. Such correspondence as was of general interest might be published in *THE CHEMIST*. Any Pan American chemist is privileged to subscribe to *THE CHEMIST* now and several have done so.

The Committee also considered the proposal of Dr. Toch that the present constitutional limitation of two consecutive terms of two years each for the President of the *INSTITUTE* be increased. The Committee was unanimously opposed to this change. While general regret was expressed that lack of this change would prevent Dr. Egloff from continuing the magnificent job he has done as President, it was considered unwise to change the constitution expressly for this purpose. Without this constitutional provision, rotation of office would tend to stagnate. In the opinion of the Committee, it is highly desirable that all elective and appointive positions in the *INSTITUTE* (both nationally and in the local chapters) be subject to more rapid turnover with the object of bringing a larger group of our members directly into contact with *INSTITUTE* affairs. It is only by actually holding office that many members will take

the time and interest in our programs that is needed to make the *INSTITUTE* a success.

Respectfully submitted,  
E. H. NORTHEY, *Chairman*.

### Annual Report of the Committee on Chapter Boundaries

TWO meetings of the committee have been held at The Chemists' Club in New York since the committee was established in September 1944. It is the unanimous view of the committee that chapter boundaries should be defined by geographical limits (county lines) rather than by territory within a radius from a given point or by some other similar means.

The committee recommends that Chapters now established be requested to amend their constitutions in order that their territory may be defined by county lines.

The committee recommends that no charter be granted to any new chapter unless its constitution delineates the territory of the chapter by county lines.

The committee recommends that no charter be granted to a chapter encompassing areas more than one hundred air miles from the chapter's seat.

The committee recommends that membership in a chapter be automatically extended to all members residing in the territory of the chapter; however, the committee also recommends that a member residing in the outlying

areas of a chapter may also request membership in another chapter, the meetings of which he may find more convenient to attend.

The committee recommends that it be discharged and that a permanent committee on inter-chapter relations be established for the purpose of coordinating the efforts of the various chapters with those of the national organization.

Respectfully submitted,

E. L. LUACES

*Chairman*

### **Annual Report of the Committee on Honorary Members**

THE Committee considered the several suggestions that had been made and recommended that Doctor Marston T. Bogert and Doctor E. Emmet Reid be elected to honorary membership. Prior to this time the Committee had also recommended that Doctor Toch be made an honorary member. All of these recommendations have been accepted and the honorary members elected.

While no regulations have been adopted by the INSTITUTE governing the choice of honorary members, it is the opinion of the Committee that honorary members should be chosen from the profession of chemistry as a whole and not simply from the INSTITUTE membership. Honorary members should be men who have rendered distinguished service in

chemistry and who have retired from the position in which they have spent the most active part of their lives. In general it is assumed that men will be 65 or over to qualify for honorary membership. However, the Committee thought it unwise to have any age requirement since occasions may arise where it would be desirable to elect a man to honorary membership when he was still active in his profession. The circumstances in each case should govern the actions of the Committee.

### **Committee on Professional Education**

There has been no meeting of the Committee on Professional Education. Under the prevailing conditions it seemed wiser to postpone action of the Committee until the INSTITUTE had a definite policy for putting into effect the recommendations of the Committee.

Respectfully submitted,

M. L. CROSSLEY

*Chairman*

### **Annual Reports of the Committee on Patents**

NO regular meetings of the committee have been held during the year. However, conferences have been held from time to time with individual members of the committee concerning specific problems.

Your chairman has made a deliberate effort to maintain close contact

## ANNUAL REPORTS OF COMMITTEES

with members of the patent committees of other technical and professional organizations, and several conferences have been held in an endeavor to exchange views on pending legislation related to patents.

Considerable attention has been given to H. R. 97, also known as the "Voorhis Bill." This bill, if adopted, would bring about far-reaching changes in our patent system and would to a great extent destroy the patent as personal property. A full report on this bill will be made available to the Council for its consideration and guidance in due season.

Respectfully submitted,

E. L. LUACES  
*Chairman*

### Report of the Committee on Contracts

THERE is a very good prospect that the committee will be able to render a final report within the near future.

Several meetings of the committee have been held at various times and correspondence has been carried on with others who have shown an interest in the question of employment contracts, and particularly invention contracts. A preliminary report of the work of the committee was published in the February *CHEMIST*. Because of the numerous angles to the problem of employment contracts and invention awards, it has been felt advisable to proceed rather slowly in

order to allow adequate time for consideration of the many questions involved before making any recommendations.

Members of the committee have conferred with outside parties from time to time, and one conference was had between the committee and a Chicago manufacturer who is attempting to formulate an invention award policy. It is now planned to draft a tentative recommendation and submit it to a number of interested outside parties for criticism before final recommendations are presented.

Respectfully submitted,

VANDERVEER VOORHEES  
*Chairman*

### Annual Report of the Committee on Pan American Relations

THE Committee on Pan American Relations met several times during the past year and suggested to the Committee on Constitutional Revision some changes to permit duly qualified chemists from our sister republics to become Corresponding Fellows and Members of the *INSTITUTE* (without the power to vote).

The Committee on Constitutional Revision unanimously voted down the proposal of the Committee on Pan American Relations.

Respectfully submitted,

FREDERICK A. HESSEL,  
*Chairman.*

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### April Meeting

The 219th meeting of the National Council of THE AMERICAN INSTITUTE OF CHEMISTS was held on Thursday, April 5, 1945, at 6:30 p. m. at the Chemists' Club, 50 East 41st Street, New York, with Vice-president Donald Price presiding.

The following officers and councilors were present.

F. A. Hessel, J. M. McIlvain, R. J. Moore, J. F. Muller, H. S. Neiman, D. Price, F. D. Snell, A. L. Taylor, M. Toch, and W. D. Turner. Mr. T. S. McCarthy and Miss V. F. Kimball were present.

The minutes of the preceding meeting were approved.

The treasurer's report was read and accepted.

The subject of accredited colleges was discussed.

The program to be held at the regular Miami Valley Chapter meeting, May 11, at Columbus, Ohio was read.

Upon motion made and seconded, it was decided that the May meeting of the National Council be held in New York at the Call of the President.

Upon motion made and seconded, it was decided that in view of the postponement of the Annual Meeting of the INSTITUTE, that the Miami Valley Chapter is authorized to present the medal of THE AMERICAN INSTITUTE OF CHEMISTS at its meeting to be held in Columbus, on May 11th.

Upon Motion made and seconded, the following student medalists selected by the New York Chapter were approved:

**Dinah Green**

Brooklyn College

**Bernard J. Gildea**

Fordham University

**Sheldon Cohen**

N. Y. U., University Hts.

**Zelda Halpern**

N. Y. U. Washington Sq.

**Richard Stein**

Polytechnic Institute of Brooklyn

**Lawrence Kushner**

Queens College

**R. C. Countryman**

Rutgers University

Upon Motion made and seconded, the following new members were elected:

*Fellows*

**Coppock, William H.**

*Instructor, Physical Science Department, State Teachers College, Winona, Minnesota*

**Driver, Robert L.**

*Instructor, Department of Physiological Chemistry, University of Alabama, University, Alabama*

**Foote, Chauncey P., Jr.**

*Superintendent of Research Department, American Bank Note Company, The Bronx, New York*

**Glassford, John**

*Chief Chemist, McCormick and Company, Baltimore 2, Maryland*

**Harrison, Henry**

*Research Chemist, Oakite Products, Inc., 22 Thames Street, New York 6, N. Y.*

**Hendrey, Waldersee B.**

*Vice President and Chief Chemist, Edwal Laboratories, Inc., Chicago, Ill.*

**Hersberger, Arthur B.**

*Process Supervisor, Research and Development Department, The Atlantic Refining Co., Philidelphia, Penn.*

**Hybarger, Raymond A.**

*Chemical Engineer, Master Tire and Rubber Corporation, Findlay, Ohio*

**Jennings, Albert E.**

*Supervisor, Technical Personnel, Electrochemicals Department, E. I. du Pont Company, Niagara Falls, N. Y.*

**Koke, Ernest S.**

*Chemical Engineer and Consulting Electric Steel Metallurgist Los Angeles 11, California*

**Kunz, Eric C.**

*President, Givaudan-Delawanna, Inc., 330 West 42nd Street, New York 18, New York*

**Manley, Ralph H.**

*In Charge of Chemical Research, General Mills, Minneapolis, Minnesota*



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*Research Chemist*, National Oil Products Co., Harrison, N. J.

### **Weidemann, H. E.**

*Consulting Chemist*, 1604 Chemical Building, St. Louis 1, Missouri

### *Members*

### **Beiderman, Max**

*Chemist*, Board of Transportation City of New York, 250 Hudson St., New York 13, N. Y.

### **Carpenter, Charles H., Jr.**

(M 1945) *Research Chemist*, Carnegie Illinois Steel Corporation Coke Works Chemical Lab. Clairton By Products Coke Wks, Clairton, Pa.

### **Evans, Samuel R.**

(M 1945) *Chemist*, Harshaw Chemical Co., Swanson & Jackson Streets, Philadelphia, Pa.

### **Feldpush, Norman V.**

(M 1945) *Chief Chemist*, Wilson & Co., Philadelphia, Pa.

### **Keller, Robert A.**

(M 1945) *Assistant Chief Chemist*, New York Testing Laboratory, New York 6, N. Y.

### *Associate*

### **Martin, Andrew J.**

(M 1945) *Organic Research Chemist*, Barrett Division, Allied Chemical & Dye Corporation, Edgewater, N. J.

### *Raised to Member*

### **Lawson, Julian Keith, Jr.**

(M 1945) *Research Chemist*, American Viscose Corporation, Marcus Hook, Pennsylvania

Dr. Moore reported a meeting which he and Dr. Egloff had had with Mr. Schroder in regard to his work as executive director.

Dr. Moore informed the Council that Dr. Egloff had telephoned various matters to be brought up for

discussion. Among these was the suggestion that THE CHEMIST carry a page of digests on various subjects, such as an abstract of legislation affecting chemists, an abstract of patents, a digest of educational activities toward the development of better scientists, a digest of the unionization situation, a digest of licensing activities.

Dr. Moore also brought up the subject of a law which has been introduced in Illinois to remove the educational requirements from civil service positions to accommodate returning service men.

With reference to licensure, it is desirable to have a chapter of the INSTITUTE in each state.

Drs. Price and Moore suggested that the leaflet describing the activities of the INSTITUTE be revised so that requirements for membership in the INSTITUTE will be clear to prospective members.

There being no further business, adjournment was taken.



Gustav Egloff, President, A.I.C., spoke at a joint meeting of the American Chemical Society and the Beta Chapter of Phi Lambda Upsilon, held in Madison, Wisconsin, on April fifth. His subject was "Petroleum in the War and Postwar." On April twelfth he spoke before the Chicago Kiwanis Club on "New Things for More People."

## CHAPTERS

### Baltimore

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*Secretary-treasurer*, Edward M. Hanzely

3816 Kimble Road

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*Council Representative*, Maurice Siegel

*News Reporter to THE CHEMIST*, Ralph Lamenzo

### Annual Report of the Baltimore Chapter

THE Baltimore Chapter has enjoyed a successful year in its activities, which consisted of six lecture meetings held at Loyola College and at the University of Maryland, and three dinner meetings. The lecturers were: Dr. Harry L. Fisher, Stamford, Conn.; Dr. F. O. Rice, Washington, D. C.; Mr. Ralph W. Lamenzo, Baltimore, Md.; Dr. M. X. Sullivan, Washington, D. C.; Mr. Harry D. Darroch, Baltimore, Md., and Dr. Paul O. Powers, Lancaster, Pa.

The lectures were on chemical subjects, except that of Mr. Harry D. Darroch, who spoke on the "Importance of Human Relations in the Coming Era." Mr. Darroch considered the chemist to be an individual who was not measuring up to the standard that might be expected of a professional man in the techniques of industrial relations. Darroch is associated with the Industrial Corporation, whose officers and directors are chosen from a score of industrial enterprises in the City of Baltimore.

Our Chapter is hopeful of enlarging upon its program of fostering better industrial relations in the field of chemical industry.

The Baltimore Chapter appointed a delegation to the recent meeting of the Washington, D. C., Chapter at which Dr. Gustav Egloff, our National President, was the speaker of the evening.

Council meetings have been well attended by the Chapter's representative, Mr. Maurice Siegel, with Julius F. Muller as alternate. Monthly reports have been made to THE CHEMIST by our news reporter Mr. Ralph Lamenzo. The Membership Committee headed by Dr. John G. Erdman, ably assisted by Matthews, Glassford, Riley, and Edmunds, has made considerable progress towards enlarging the Chapter's membership. Mr. Edward M. Hanzely is to be congratulated in handling the lecture program. The annual meeting for the election of officers will be held on May 17th.

Respectfully submitted,

A. H. WARTH, *Chairman*.

## CHAPTERS

### Chicago

*Chairman, Hilton I. Jones*

*Vice-chairman, Robert J. Gnaedinger*  
*Secretary-treasurer, Charles L. Thomas*

*Universal Oil Products Company*  
*Riverside, Illinois*

*Council Representative, Gene Abson*

#### Annual Report of the Chicago Chapter

THE Chapter publicly opened its year on October 6 with a testimonial dinner in honor of Mr. R. B. Harper of the Peoples Gas, Light and Electric Company. The meeting was attended by approximately 250 members and friends of Mr. Harper.

At the December 8th meeting the subject was "What Shall We Do with Germany?" It was ably discussed by Dr. Otto Eisenschiml, Mr. E. Gordon Fox and Dr. Anton J. Carlson. The material presented at this meeting has been printed in THE CHEMIST and has attracted wide attention.

Mr. Arthur Schroder of the Alien Property Custodian's Office was the speaker at the February 9, 1945, meeting. He talked on "Taking the I. G.'s I. Q." He covered many of the chemical patents issued in the

United States that were assigned to the I. G. and pointed out the emphasis that they have placed on cellulose chemistry.

The next meeting is scheduled for April 13th with Dr. E. C. Williams, vice-president and director of research of the General Aniline and Film Company, as speaker. His subject will be "The Chemist in Management."

The Annual Meeting is scheduled for June 8th.

As of August 26, 1944, the Chapter had a membership of 149. During the year we have had 28 new members and additions from other chapters. Five members moved away from the Chicago area. We lost one member, Mr. C. F. Burgess of the Burgess Battery Company, by death. The current membership is 171.

Respectfully submitted,

CHARLES L. THOMAS, *Secretary.*

### Los Angeles

*Chairman, Albert Salathe*

*Vice Chairman, Henry W. Greenhood*

*Secretary, Major J. B. Ficklen*

*L. A. C. Health Department*

*808 N. Spring Street, Los Angeles, Calif.*

*Treasurer, E. B. Henderson*

*Council Representative, R. J. Abernethy*

*News Reporter to THE CHEMIST, J. B. Ficklen*

### Annual Report of the Los Angeles Chapter

THE activities of the Los Angeles Chapter during 1944-1945 have been most serious and earnest. Forums, debates, and discussions have been our wont. Three definite objectives are being fostered:

1. The licensing of chemists in California.
2. The making and using a roster of chemists in the Los Angeles area.
3. Acting as a clearing house for chemists in the Los Angeles area.

Our speakers have included Dr. Gustav Egloff, national president; S. K. Cochems, executive secretary of the Los Angeles County Medical Association; chemists from the oil companies, and the U. S. Employment Service, and Dr. R. V. Stone, public health expert and advocate of licensure.

We hold monthly meetings, strictly business meetings alternating with meetings with speakers.

We have adopted local dues of \$10.00 per annum for Fellows and Associates. We have a working constitution and by-laws. We hope to have a paid executive secretary for the Chapter.

We appreciate the fine spirit of co-operation from the National group and feel that the INSTITUTE has a brighter future than ever. We believe that our objectives will be accomplished in the Postwar world and we want to have a part in the work. We appreciate being kept informed by letter of the activities of the other chapters. We sense the growing importance commercially of the Southwest and are most anxious to be in the van of progress.

We are encouraged by the willingness of our membership to function on committees, the chairman of each committee being responsible to the executive committee. Practically our whole membership is working on one committee or another.

Respectfully submitted,

—ALBERT SALATHE,  
*Chairman.*

### Louisiana

*Chairman*, D. F. J. Lynch

*Vice-chairman*, C. S. Williamson, Jr.

*Secretary-treasurer*, J. David Reid  
Southern Regional Research Laboratory  
2100 Robert E. Lee Boulevard  
New Orleans 19, Louisiana

*Council Representative*, Harold A. Levey  
*News Reporter to THE CHEMIST*, Helen M. Robinson

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ON March 23rd seventy-nine members and guests of the Louisiana Chapter held a dinner meeting at the Jung Hotel in New Orleans. The meeting was presided over by Chairman D. F. J. Lynch. The action of the Civil Service Commission with regard to prescribing no minimum educational requirements for chemists under the Veterans' Preference Act of 1944 was discussed. It was pointed out that not only was this a step backward in the fight to recognize the chemist as a professional man, but that it would be a serious hindrance to the employment of young chemists by the Government because of its discouraging effect upon young chemists entering the service. It was suggested that the INSTITUTE make every effort to persuade the Civil Service Commission to recognize the chemist as a professional man as it has already recognized doctors, dentists, and nurses.

The speaker of the evening was Dr. O. E. May, F.A.I.C., Chief, Bureau of Agricultural and Industrial Chemistry, U. S. Department of Agriculture. His subject was "The Research Accomplishments of the Four Regional Research Laboratories." The talk was in a popular vein and was thoroughly enjoyed by the group.

The four regional laboratories have been in operation only five years, which is a very short time as research is considered, and yet a number of

discoveries have been made which show the value of such research organizations. Perhaps the most spectacular of these has been the contributions of the Northern Laboratory at Peoria, Illinois, to the increased production of penicillin. Dr. May told the story of the discovery and application of penicillin by Fleming and Florey and described how Florey came to the Northern Laboratory for help at a time when the yield of penicillin was so small that commercial development was considered impracticable.

The Fermentation Division of the Northern Laboratory stepped in at this point and predicted that they would be able to increase the yield of penicillin 5-fold. This promise was not only kept but by proper selection of organisms and conditions the yield was increased 50 times and then 100 times. This seldom-mentioned chapter in the story of penicillin was of great importance since the increased production was one of the determining factors in the decision to throw sufficient effort into its manufacture to make it available to the military forces. The sequel to the story is too well-known to be given here but as Dr. May pointed out, this one development is of almost incalculable value to the peoples of the world.

As an example of the manner in which the work of the Laboratories has turned toward war research, the

food dehydration work of the Western Laboratory was mentioned. The work there has served to guide much of the commercial installations now established in this and other countries. An interesting point, showing how a small variation in technique may have important results was described. This was the addition to packages of dried cabbage or potatoes of an ordinary mailing tube containing calcium oxide. This so reduced the moisture content of dried vegetables as to indicate that they might be kept under the hot storage conditions prevailing in the tropics instead of spoiling as it had previous to this innovation.

Much of the effort of the Southern Laboratory has been expended in the production of a superior grade of cotton tire cord. The results of this work have not yet been published but as an example, the strength of a tire cord may be increased as much as 30 per cent with greatly increased wearing qualities in the tire. Such work has gone through the pilot plant stage and experimental tires have been manufactured and tested.

The Eastern Laboratory has developed an apple flavor concentrate from apple wastes, in connection with the work there, on the well-publicized "apple-honey." The new food product is made by flash-evaporation of apple juice and so well reproduces the original flavor that experts can tell the variety of the apple from

which the concentrate was made.

As an example of the manner in which outside influences may change the course of a research problem, Dr. May described the production of a rubber substitute, "Norepol," made by polymerization of vegetable oil fractions. This product was carried through to the point where it was being produced on a commercial scale by a number of companies, not only contributing to the solution of the problem of rubber shortages, but also affording an industrial outlet for large amounts of vegetable oils and carrying out to the letter the original conception of the purpose for which the laboratories were established. Then the further industrial development of the whole project had to be dropped because of a sudden shift from an excess of oils to a lack of oils for food uses, so that it became necessary to restrict the uses to which these oils could be put.

Dr. May concluded his talk by pointing out that although these were only a few examples of the accomplishments of the Regional Laboratories, they did show the value of such research organizations and the manner in which they could pay for themselves by service to the country.

### Annual Report of the Louisiana Chapter

THE Louisiana Chapter has successfully completed its first year except for the one remaining meeting

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for election of officers for next year.

At the organizational meeting it was decided that meetings would, in general, be of such nature that they would interest the chemist as a professional man. A basic policy was laid down of not less than four meetings during the course of the year, which would include, besides the annual election of officers, a field trip through a neighboring industrial plant, a dinner meeting of social nature, and one or more lectures.

Because of war conditions, no plant inspection trips have been made. However, a meeting to consider the recommended changes in the patent situation was held and also a very successful dinner meeting. The latter was thrown open to wives and guests and a total of seventy-nine people were present. The speaker of the evening was Dr. O. E. May, Chief,

Bureau of Agricultural and Industrial Chemistry, who discussed the accomplishments of the four Regional Research Laboratories of the Bureau. The talk was in a popular vein and a number of inquiries from prospective members of the INSTITUTE have been received since the dinner. The usual report on this dinner is being sent to the CHEMIST by the reporter.

A committee to endeavor to obtain passage of a law in Louisiana to license chemists was formed but it was decided not to join forces with the engineering societies who had formulated a bill for the licensing of engineers. However, plans are being made to bring such a bill to the attention of the legislature when it meets again. The Louisiana Legislature meets only in alternate years.

Respectfully submitted,

DR. F. J. LYNCH, *Chairman.*

### Miami Valley

*Chairman, E. L. Luaces*

*Vice-chairman, J. M. Purdy*

*Secretary-treasurer, John R. Fisher, Jr.*

Chemical Developments Corporation

1771 Springfield Street, Dayton 3, Ohio

*Council Representative, Harvey G. Kittredge*

#### Annual Report of the Miami Valley Chapter

THE Miami Valley Chapter has continued its policy of cooperating closely with other professional and technical organizations, and to this end it has taken a major part in the

establishment of the "Dayton Technical Societies Council", of which the Miami Valley Chapter is a charter member.

Either separate or joint meetings have been held throughout the year. The choice of speakers and scope of



subjects have been such that attendance has in many cases been far greater than the Chapter membership. Among others, Dr. James R. Withrow, F.A.I.C.; Dr. W. J. Baeza, F.A.I.C.; Dr. Foster D. Snell, F.A.I.C., and Dr. Robert J. Moore, F.A.I.C., have accepted our invitation to address the Chapter.

Because of the cancellation of the Annual Meeting of the INSTITUTE,

the Miami Valley Chapter has undertaken the responsibility of conducting the medal award meeting as a part of its regular meeting scheduled for Columbus, Ohio, on May 11, 1945. The Chapter has arranged the program and will be responsible for all financial commitments in connection therewith.

Respectfully submitted,

E. L. LUACES  
*Chairman*

### New York

*Chairman*, M. L. Hamlin

*Vice-chairman*, Charles N. Frey

*Secretary-treasurer*, Lloyd W. Davis

E. F. Drew & Company

416 Division Street, Boonton, New Jersey

*Council Representative*, A. Lloyd Taylor

*News Reporter to THE CHEMIST*, Arthur DeCastro

#### Annual Report of the New York Chapter

AT the end of the previous season the Chapter Council decided to circularize the membership to determine what sort of meetings were desired and what subjects should be covered. An overwhelming majority voted to continue the two-paper programs of the previous year—usually one paper on a general or professional subject and one on a technical or scientific subject at each meeting.

This policy has been followed during the current year so far with marked success under the able direction of Mr. Miskel and his excellent program committee. Attendance at

meeting dinners has run well over 100 with a much larger attendance at the meetings proper. The largest attendance was at the popular testimonial dinner to Dr. Maximilian Toch in October.

With the cooperation of all hands including the speakers every meeting so far has been adjourned by ten p. m., a fact favorably received by the large fraction of commuting members.

Owing to rising costs, more extensive circularization of chemists outside our membership, and generally expanded program activities, expenses have been heavier than previously. It is as yet too early to forecast whether



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increased membership refunds from the national office will take up the slack; there is a definite possibility that the balance at the end of the year will be substantially less than that with which the year started. In any case it seems to be the general opinion that maintenance of the present standard of meetings is worth the extra cost, and that financial plans should be based on keeping up this standard.

The Chapter has consistently supported the national policies of the INSTITUTE, particularly with respect to (a) studying the question of employee representation, and (b) securing the services of a permanent salaried executive director. The latter aim has been achieved in the appointment of Mr. Arthur Schroder, to whom go the Chapter's best wishes.

The Chapter also wishes to register its appreciation of the magnificent work done by Dr. Egloff in expanding the INSTITUTE both as to membership and number of chapters.

It appears to be a fact that among professional men in this country, chemists are the group most lacking in social sense, i. e. awareness of general forces and trends active both within and without their particular professional field; this of course includes a sense of professional coherence. The fact cannot be very well proved statistically, but it seems to be substantiated by the opinion of those who meet and deal with large

numbers of chemists. It is difficult, for example, to recall offhand any contribution of an American chemist comparable with Bassett Jones' "Debt and Production" or Dahlgren's "When Capital Goes on Strike"; both authors are or were engineers. The extreme of narrow perspective is illustrated by the remark of a chemical executive, "All socially conscious people are screwballs."

This is not the place to discuss causes. The situation, if the above evaluation is accepted, is a brute fact that poses a problem to the INSTITUTE, to the Chapter and to each individual member. It poses the problem of developing a catalyst that will accelerate the interest of chemists in their profession and its relation to themselves and the community, and of devising a mechanism that will permit expression of this interest to and through the INSTITUTE.

In a remarkable article, "The Biosphere and the Nobosphere" (*American Scientist*, v. 33, pp. 1-2, Jan. 1945), W. I. Vernadsky discusses man as a recently developed geologic force. He says, "Thus the whole of mankind put together represents an insignificant mass of the planet's matter. Its strength is not derived from its matter but its brain. If man understands this, and does not use his brain and his work for self-destruction, an immense future is open before him in the geological history of the biosphere."

In a modest way this is particularly applicable to the chemist today. His age is here. If he uses his brain and work constructively, an "immense future is open." But he must free his imagination from the limitations of structural formulae and balanced equations. Certainly he must use these and other powerful tools, but he must also think in terms of industry, economics, philosophy, hygiene, ethics, politics . . . of all human activities. And really **THINK**.

The enunciation of these ideas (which are neither original nor unique) is only a pious exercise unless practical application can be made.

The Chapter and the INSTITUTE will benefit tremendously by increased member participation in their activities. Attendance at formal meetings to hear talks, however stimulating and informative, is not enough. A larger opportunity for committee activity must be offered. Smaller informal groups must meet where dis-

cussion can be free and even unparliamentary — weekly luncheons, for example, where five or ten or more men can get together.

But the initiative must come from the younger men; it is their world to make and they must take it over.

I recommend that consideration be given to the following for next year:

1. Provision as a regular feature in THE CHEMIST of a correspondence column for discussion of matters of professional interest.

2. Increase in the number of Chapter committees and appointment of more younger men to them.

3. Formation of small informal local groups, e. g. luncheon or dinner clubs, for discussion of matters of interest to chemists.

4. Utilization of such local groups by the Chapter, e. g. for publicity work, contacting new members, making surveys, etc.

Respectfully submitted,  
MARSTON L. HAMLIN, *Chairman*.

## Niagara

*Chairman*, M. R. Bhagwat

*Vice-chairman*, Frederick L. Koethen

*Secretary-treasurer*, Frederick L. Sievenpiper

National Aniline Division

Allied Chemical and Dye Corp.

Buffalo, New York

*Council Representative*, Arthur W. Burwell

*Alternate*, Alvin F. Shepard

*Reporter to THE CHEMIST*, John E. Seubert

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"THE Problems of Professional Organization" were reviewed by Dr. R. C. Benner for the Niagara Chapter at their March 23rd meeting at the University Club in Buffalo. Dr. Benner quoted freely from "The Technologists Stake in the Wagner Act" published by the American Society of Engineers and dedicated by them to the unrealized aim of Professional Unity.

All professionals have one thing in common: They are trying to sell education and ability, and similar problems of salesmanship apply to all. There is a growing interest in co-operative effort in this salesmanship. The Society of Engineers canvassed a number of professional organizations to determine their plans and accomplishments in this problem. Many neglected or declined to answer. Those that did respond agreed in the need, but had little to offer as concrete concerted action. There is apparently considerable reticence, on the part of both individuals and organizations to speak lest they be branded as labor agitators. Management is well integrated and the hourly wage earner is well organized under the Wagner Act but the salaried professional has neither organization nor unity.

It was pointed out that in the general trend toward organization, the professionals may have to choose between organizing and being organized. Any unorganized area of

society is subject to the enroachment of labor groups. One of the primary purposes of the so-called professional unions has been to prevent this enroachment. Already professionals are being represented and dominated by a large number of alien groups.

Dr. Benner's talk served as the nucleus for a very interesting debate. Professional men cannot well organize under the Wagner Act even if they desire since such an organization must be free of supervisory personnel which automatically purges much of the numerical strength and leadership of the professions. Assuming that an effective organization could be established, there were several schools of thought as to the principles it should follow. Some felt that if the existing professional organizations would raise the standards of education and ability as has been done by medical, dental and legal associations, the desired social esteem and security would ensue. This might necessarily entail a licensing system by which those professions implement their standards and which is considered undesirable by some in the chemical profession. It was further pointed out that an organization so constituted would still leave unrepresented large groups of professionals who could not meet those standards.

It may be then that a broader or even new type organization offering wide representation is needed, but the discussion did not indicate the form

it should take, probably because there was no clear cut agreement as to the purpose of such an organization. There was an obvious desire to avoid collective bargaining in the usual sense of the term. Nevertheless economic security seemed the common goal, though it took different forms. Annuities, contracts, and post war security were mentioned as well as working conditions. While not boldly stated, salary levels seemed a primary concern. The professional man is squeezed between the natural desire of employers to maintain the status quo, and the relatively inflated wage levels of the hourly worker. The difficulty seems to be a lack of means by which adequate salary may be determined and correlated to training and individual attributes.

The debate was concluded with the suggestion, those interested or present submit to the officers of the Niagara Chapter, anonymously if so desired, their written recommendations for a solution of the problem. These recommendations will be formulated and transmitted to the National Council for its consideration.

### **Annual Report of the Niagara Chapter**

**D**URING this second year of revived activities of the Niagara Chapter, the Executive Committee decided to hold four principal meetings to be devoted to discussions of present day problems affecting the

status of chemists as professional men.

Dr. Raymond Kirk of Brooklyn Polytechnic Institute convincingly presented his views with the conclusion "Professionalism is the Answer for the Chemist."

At another meeting, Dr. R. C. Benner, formerly of Carborundum Company, discussed "Professional Organization Problems," chiefly from the point of recent developments due to the Wagner Act. He based his discussion on the book, "Technologists' Stake in the Wagner Act," published by the American Association of Engineers, Chicago, Illinois.

During both of these meetings, it was clearly brought out that the chemical profession was not sufficiently unified and thus far there did not exist any workable plan to safeguard the economic welfare of its members,

The third meeting was addressed by Dr. P. H. Groggins of the War Food Administration, his subject being "Agricultural Dependence on Chemicals During War." Mr. Groggins showed the vast development of new chemicals to be used for growing and processing food products, with a hopeful note that it may provide additional employment for a large number of chemists and chemical engineers during the post-war years.

It is planned to hold the fourth

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meeting of the Chapter soon after the middle of May.

In an effort to stimulate the growth of the INSTITUTE, it was decided to invite a large number of local chemists to the meetings, as guests, a few of whom have already applied for membership in the INSTITUTE. The meetings have been quite informal, thereby providing opportunity for a cordial discussion of professional problems of individual interests.

An attempt is also being made to investigate the possibility of securing cooperation of other local technical societies regarding matters of professional interest.

With this beginning, it is hoped that a spirit of mutual helpfulness may be developed leading to better understanding of vital problems among members of the chemical profession.

Respectfully submitted,

M. R. BHAGWAT, *Chairman*.

### Northern Ohio

*Chairman*, Henry F. Frank

*Vice-chairman*, Robert B. Waters

*Secretary-treasurer*, M. Paul Hofmann

C. O. Bartlett-Snow Company

6200 Harvard Avenue, Cleveland, Ohio

*Council Representative*, Charles W. Rippie

#### Annual Report of the Northern Ohio Chapter

THE organization of the Northern Ohio Chapter was initiated during President Egloff's visit in October, 1944, at the Statler Hotel, Cleveland, Ohio. Eight members of the INSTITUTE were present and in favor of forming a chapter in this area. Henry F. Frank was elected temporary chairman, and M. Paul Hofman, Secretary-Treasurer.

A meeting was called on November 13, at Hotel Carter, Cleveland, Ohio, to petition the National Council to grant a charter for a Northern

Ohio Chapter. This petition was signed by twelve fellows. At a meeting of the National Council on December 6, 1944, our petition was approved.

A dinner business meeting was held on December 27 at Hotel Carter, and the following officers were elected and appointed: Chairman, Henry F. Frank; Vice Chairman, R. B. Waters; Secretary-Treasurer, M. Paul Hofman; National Council Representative, Charles W. Rippie. Council members: Miss Elizabeth Pomerene, M. M. Braideck, Hayden B. Kline, Gordon H. Mutersbough

and Monroe J. Bahnsen.

On February 14, 1945, Dr. Egloff presented the charter followed by an important message concerning the affairs of the INSTITUTE.

After a short business meeting, Dr. Egloff delivered a popular address on "Petroleum as a Chemical Industry." About forty attended in spite of the very inclement weather we had.

On March 26, 1945, Dr. E. L. Luaces, President of the Chemical Developments Corporation and Chairman of Miami Valley Chapter, gave an address on "The Patent Rights of Employer and Employee Chemists."

On April 25, Dr. R. J. Moore, Manager of Development Laboratories, Bakelite Corporation, and Past President of the INSTITUTE, will address the chapter on "A Plastic's Man Looks at Professional Status."

In May we contemplate a meeting in Akron.

In June, we will have a business meeting at the summer estate of M. Paul Hofman on the Lake.

Thirty-nine members have affiliated to our chapter since its inception, four of which have since moved permanently from this area, and one application which was sent several months ago. In writing Mr. H. S. Neiman, he replied that the application was never received. A duplicate is being mailed by the applicant.

Five new members have been affiliated. Due to transportation facilities, quite a few members do not desire to affiliate at present. Several applications are in preparation which proves that we are off to a good start in our short period of existence.

The chairman wishes to express his appreciation for the excellent co-operation and work done by the officers and members.

Respectfully submitted,

HENRY F. FRANK, *Chairman.*

## Pennsylvania

*Chairman, Glenn E. Ullyot*

*Vice-chairman, Harold A. Heiligman*

*Secretary-treasurer, Kenneth E. Shull*

23 Bala Avenue, Bala Cynwyd, Pennsylvania

*Council Representative, John M. McIlvain*

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### Annual Report of the Pennsylvania Chapter

UP to and including March, the Pennsylvania Chapter has held five technical and professional meetings. All of these, with the exception of the February meeting, were held at the Engineer's Club, 1317 Spruce Street. The February meeting was held at the Harrison Laboratory of Chemistry, University of Pennsylvania. Each meeting was preceded by an informal dinner at the Engineer's Club.

A list of the meetings, speakers, and topics follows:

- (1) October 31, 1944. Dr. Paul O. Powers, Chief of the Organic Research Division, Armstrong Cork Co. "Recent Developments in High Polymers."
- (2) November 28, 1944. Dr. E. L. Luaces, President, Chemical Developments Corp. "The Patent Rights of Employer and Employee Chemists."
- (3) January 30, 1945. Dr. M. L. Crossley, Research Director, American Cyanamid Co. "Professional Status and Licensure."
- (4) February 27, 1945. Dr. Gustav Egloff, Director of Research, Universal Oil Products Co.; President, American Institute of Chemists. "The Chemist's Role in a World at War."
- (5) March 27, 1945. Dr. Foster D. Snell, President, Foster D.

Snell, Inc. "The Factors in Detergency."

The April meeting will be held on the 18th, and will consist of a joint meeting with the Philadelphia Section of the American Chemical Society. The speaker will be Dr. Horace G. Byers, formerly with the U. S. Department of Agriculture. Dr. Byers will discuss "Soil Genesis and Some Soil Properties."

On Saturday afternoon, May 19th, a plant trip will be taken through the newly opened Research Laboratories of the Pennsylvania Salt Manufacturing Company at Whitemarsh.

An outing to be held sometime in June at one of the local country clubs is now under consideration by the program and entertainment committees.

The average attendance was twenty-two at dinner and thirty-eight at the meetings.

The Executive Committee met three times prior to the March meeting.

The new officers elected for the year 1945-1946 are: Chairman, Mr. Harold Heiligman, E. J. Lavino & Company; Vice Chairman, Mr. Harold Olson, Harshaw Chemical Company; Secretary-Treasurer, Mr. Kenneth Shull, Philadelphia Suburban Water Company; Council Representative, Mr. John M. McIlvain, Atlantic Refining Co..

Respectfully submitted,

GLENN E. ULLYOT, *Chairman.*



## Washington

*President, L. F. Rader, Jr.*

*Vice-president, L. R. Heiss*

*Treasurer, T. H. Tremearne*

*Secretary, Ernest J. Umberger*

*207 Albany Avenue, Takoma Park, Maryland*

*News Reporter to THE CHEMIST, S. W. Griffin*

*Council Representative, T. H. Tremearne*

THE second meeting of the season was held at Wardman Park Hotel, February 26, 1945. A dinner, in honor of Dr. Gustav Egloff, preceding the meeting, was attended by twenty-four members and guests.

Dr. L. N. Markwood, Chairman of the Chapter, opened the meeting with a brief business session, then introduced the speaker of the evening, Dr. Egloff.

The subject of the talk was "Petroleum in a World at War (The Role of the Chemist and Chemical Engineer Therein)." The members and guests present showed profound interest in the talk and received a vivid word picture of the development of many war essential materials which have been produced on a commercial scale from petroleum.

The attendance at the meeting was thirty-four members and guests. Dr. Albin H. Warth was accompanied by four members of the Baltimore Chapter. Dr. W. W. Skinner, Dr. H. E. Barnard, Lt. Col. Walter Palmer, M. M. Barker, Joseph E. Keller, A. I.

Fieldner and Dr. F. D. Rossini were among the distinguished guests present.

### Annual Report of the Washington Chapter

THE Washington Chapter got off to a late start during this period inasmuch as the first meeting was held in December. That meeting was a business session attended by a small but greatly interested group of members. A good deal of concern was expressed over the principal objectives of the INSTITUTE, principally in respect to what the officers and national council were accomplishing. At this meeting, a new slate of officers was elected, which immediately took office.

One other meeting was held since that time, in February, when we had the privilege of an address by our President, Dr. Gustav Egloff, on the subject, "Petroleum in a World at War." This talk met with great interest, and we were pleased to have with us a number of non-members whom it attracted. The Chapter



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has scheduled for its next meeting in April a talk by a specialist in the field of timber engineering, which will be reported on later.

The Chapter is in good financial condition, probably the best in its history, and recently opened a bank account. One of the main problems confronting us was to rebuild the membership and the interest which has somewhat declined because of war conditions. The decentralization

of various Government Agencies, which began about 1940, withdrew from Washington many of our formerly prominent members. This alone has created a special situation. On the other hand, the ranks are constantly being renewed with new members and we hope to rebuild the Chapter into an active organization.

Respectfully submitted,

LOUIS N. MARKWOOD,  
*Chairman.*

### Western Pennsylvania

*President, Henry G. Goodman, Jr.*

*Vice-president, Henry F. Smyth, Jr.*

*Secretary-Treasurer, Jacqueline S. Front*

*Mellon Institute of Industrial Research*

*Pittsburgh 13, Penna.*

*Council Representative, William H. Hill*

#### Annual Report of the Western Pennsylvania Chapter

IN November of 1943, upon the invitation of Dr. Egloff, several of the members of the INSTITUTE, residing in Western Pennsylvania, met with the president for dinner and to discuss the formation of a Western Pennsylvania Chapter of THE AMERICAN INSTITUTE OF CHEMISTS. At this meeting it was decided that those present should constitute a self-appointed committee, with Dr. W. H. Hill as chairman, to carry out the details incident to organizing such a chapter.

Accordingly, such preliminary action as was necessary was taken, and members of the INSTITUTE from Pittsburgh and surrounding territory were requested to attend an organization meeting, held at the Mellon Institute on February 2, 1944.

Dr. Hill, as acting chairman, presented a brief review of the objectives of the INSTITUTE and a summary of the advantages to be gained by the formation of a local chapter. The proposed constitution and by-laws of the chapter were approved after some discussion, followed by a few minor changes.

A nominating committee was ap-

pointed by Dr. Hill, to nominate chapter officers, upon authorization of the new chapter by the National Council. This committee consisted of Dr. O. F. Hedenburg, Chairman; Dr. M. F. Dull, and Mr. LeRoy V. Clark.

A petition to the National Council for a charter was signed by those members present, and the meeting adjourned.

On May 19, 1944, a dinner meeting was held at Webster Hall Hotel, for the purpose of formally inaugurating the Western Pennsylvania Chapter, which had hitherto been approved by the National Council. Dr. O. F. Hedenburg gave a report of the nominating committee, which proposed the following members for officers of the Chapter: Chairman, Dr. Henry G. Goodman, Jr.; Vice Chairman, Dr. Henry F. Smyth, Jr.; Secretary-Treasurer, Miss Jacqueline S. Front, and Council Representative, Dr. W. H. Hill.

These members were elected unanimously to the respective offices.

Dr. Egloff, the national president, was the guest speaker of the evening. Dr. Egloff formally welcomed the new chapter, following with a report on the status of the national organization. After a comprehensive discussion of the activities of the A. I. C. Dr. Egloff then led an open forum on the subject of the Petroleum Industry.

On November 17, 1944, a business

meeting was held, following a dinner at Webster Hall Hotel. In view of the fact that the constitution of the chapter calls for an election of officers to be held at the annual Fall meeting, the report of a nominating committee, previously appointed, was heard. It was recommended, and approved by the Chapter, that the officers elected to finish the year at the previous meeting in May, be continued in office for the next year. Following the meeting at Webster Hall, the group adjourned to the Mellon Institute Auditorium, where Dr. M. C. Crossley, director of research of the American Cyanamid Company and past president of the A. I. C., presented the principal address on "The Development of the Sulfa Drugs."

Dr. Crossley's address was supplemented by brief talks by two members of the Allegheny County Medical Society, Dr. Paul Gross and Dr. John W. Shirer, who had been asked to participate by giving the physician's point of view of the sulfa drugs. Dr. Gross's subject was "The Sulfa Drugs as the Pathologist Sees Them," discussing the experimental and clinical aspects. Dr. Shirer spoke on "The Sulfa Drugs from the Point of View of the Surgeon," stressing their use as an adjunct to surgery. Members of the American Chemical Society, Allegheny County Medical Society, nurses, and pharmacists of the area had been especially invited

## CHAPTERS

to attend this meeting.

In view of the unusually large number of technical meetings in the Pittsburgh area, the Western Pennsylvania Chapter has adopted the policy of initially having only two to three regular meetings during the year, in order not to lose the interest of its members by overburdening them with too many additional attendance obligations. It is planned, however, to pursue a course of *especially* interesting meetings, inviting other interested and allied groups to participate in these meetings, in order that knowledge of the chemists' contributions to human welfare might become more thoroughly disseminated throughout these groups. Thus, the Allegheny County Medical Society, the local Pharmaceutical Association, and trained nurses of the area, as well as the Pittsburgh Section of the American Chemical Society, were extended invitations to hear Dr. Crossley speak on the Sulfa Drugs at the November meeting.

The Western Pennsylvania Chapter now carries fifty-four members on its roster, an increase of 116 per cent of the original membership.

The financial condition of the chapter is sound.

Respectfully submitted,

H. G. GOODMAN, *Chairman.*

### New Veterans' Organization

A new veterans' organization is being founded by an organizing chapter at the Polytechnic Institute of Brooklyn. Its name, Gamma Iota Alpha, has initials which stand for "G.I. Association". Honorably discharged veterans, either men or women, who are attending or who have attended college are eligible. Information may be obtained from the Association at the Polytechnic Institute of Brooklyn, 85 Livingston Street, Brooklyn 2, N. Y.

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My attempts have been rather discouraging since chemical engineers are fairly numerous here as a result of Canadian University Policy. I understand that the situation is more acute in the United States. It may be possible that an interested party will be able to make use of my technical services by providing me with suitable secretarial assistance. My vision is such that I have no difficulty in traveling or finding my way around machinery. Objects larger than one-quarter inch are discernable thus I am able to sketch plans and work calculations with the aid of a black-

board. I have mastered Grade III Braille course. This is a shorthand adaptation of ordinary braille. This I use for notes for personal use. I can also operate a typewriter.

I would appreciate all that you may be able to do in finding a position in which I may be of use. It is my belief that small concerns in which I am the sole technical authority would be most practical.

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Education: Graduate (4th in class) of McGill University in chemical engineering. 1943. 2 months of postgraduate work.

Experience: Before graduation: Defense Industries, Ltd., Explosives Plant. Oct. 1943 to Feb. 1944. Frank W. Horner, Manufacturing Chemists. Plant and maintenance engineer. May 1944 to present. Cannington Cereal Industries, Cannington, Ontario, Canada, as research and company engineer.

Can undertake plant engineering and maintenance supervision with small company with secretarial assistance; field work in development of new chemicals, sales engineering.

Familiar with aspects of food chemistry, and engineering, chemistry of plastics and rubber; manufacturing of pharmaceuticals.

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To the Editor:

I enclose clipping from *The Chicago Sun*:

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"German capital and plans for construction of ultra-modern technical schools and laboratories will be offered at extremely favorable terms since they will afford the Germans an excellent opportunity to design and perfect new weapons!"

—OTTO EISENSCHIML, F.A.I.C.

(See January 1945 *THE CHEMIST* for debate on this subject.)

### Sweedler Opens Patent Office

Benjamin Sweedler, ex-member of the examining corps of the United States Patent Office, has resigned his position as supervisory patent attorney with Allied Chemical & Dye Corporation and announces the opening of an office for the practice of patent, trade mark, and copyright law, at 420 Lexington Ave., New York 17, N. Y.

### New Compound Developed

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### Meeting Dates

May 11. Miami Valley Chapter.

THE AMERICAN INSTITUTE OF CHEMISTS, Deshler-Wallick Hotel, Columbus, Ohio. Medal Award to John W. Thomas, chairman and directing head, The Firestone Tire and Rubber Company. Program on page 263. Dr. E. L. Luaces, chairman of Committee on Arrangements.

May 17. Business Meeting. Los Angeles Chapter, THE AMERICAN INSTITUTE OF CHEMISTS.

May 17. Dinner and Business Meeting. Baltimore Chapter. THE AMERICAN INSTITUTE OF CHEMISTS. Northway Apartments, Baltimore, 6:30 p. m.

May 25. New York Chapter of THE AMERICAN INSTITUTE OF CHEMISTS. Annual Business Meeting. 26th Floor, No. 2 Park Avenue, New York, N. Y. Speaker: Dr. Wanda K. Farr, Celanese Corporation of America, "Utilization of Plant Cell Membranes."

June 1. Chicago Chapter, THE AMERICAN INSTITUTE OF CHEMISTS. Business Meeting.

June 21. General Meeting. Los Angeles Chapter, THE AMERICAN INSTITUTE OF CHEMISTS.



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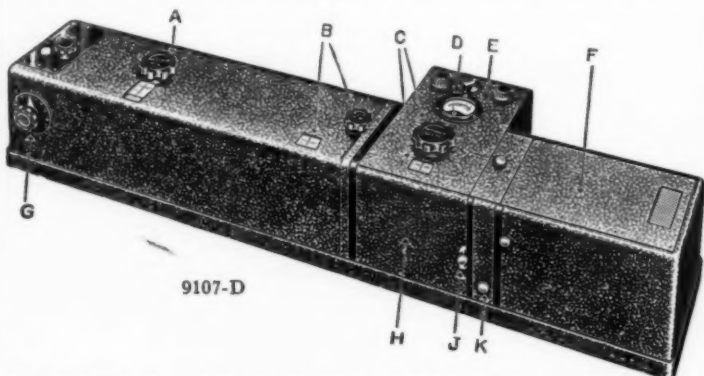
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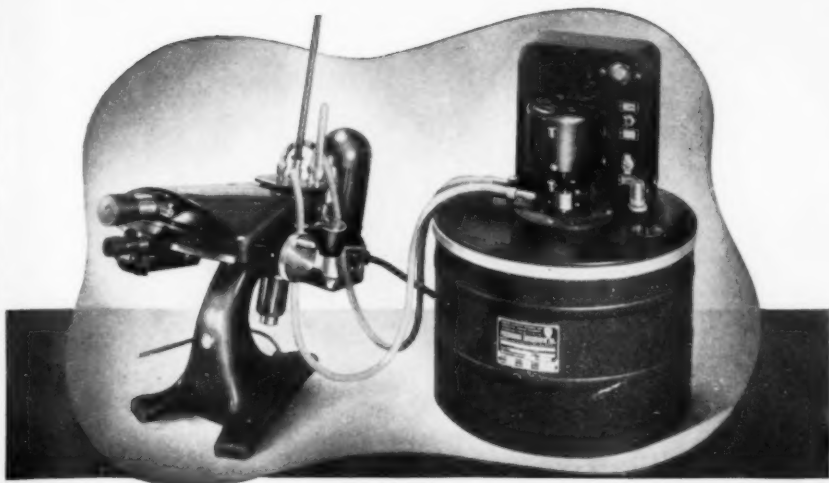
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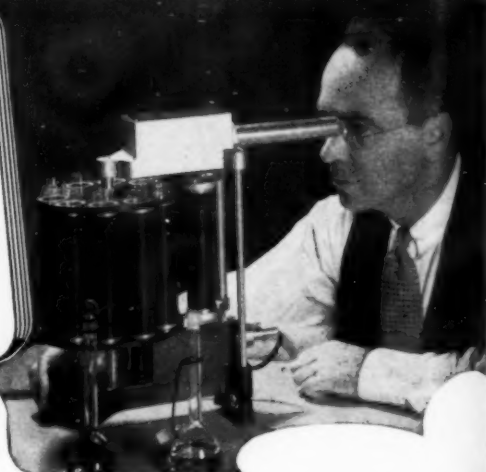
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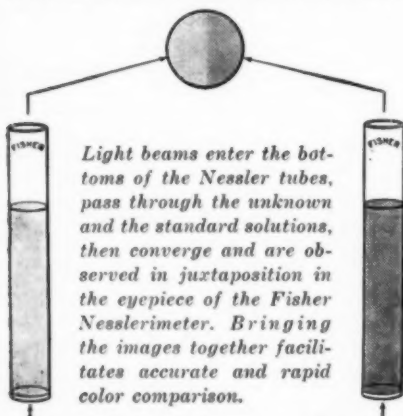
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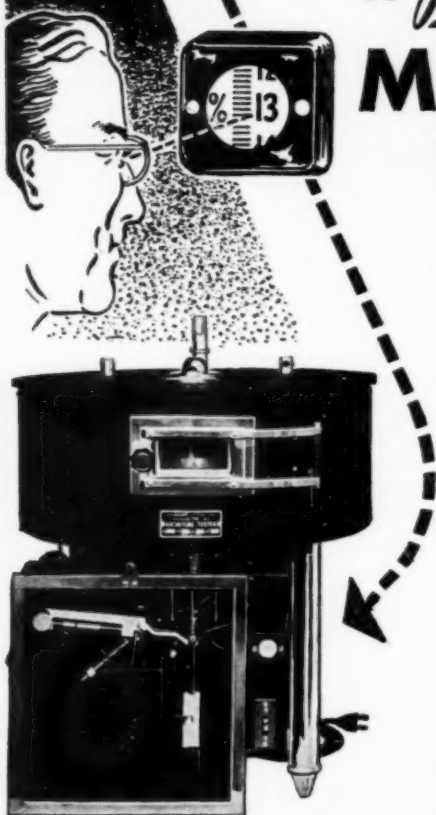


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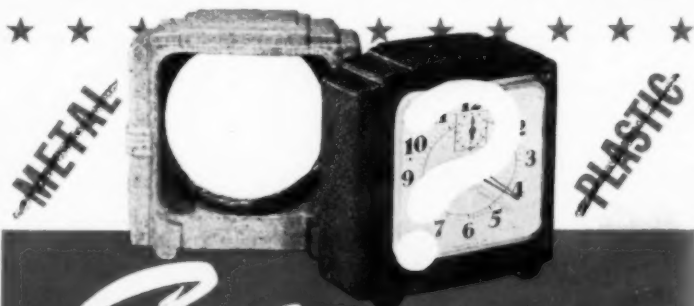
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